

BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B01 Symmetry:
 Span Length: Span 1 Span 2 Span 3 Span 4 Span 5
 38.833 0.000 0.000 0.000 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	38.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	1.917	235.5	235.5	35.000	0.0
1	P	5.417	0.0	0.0	0.000	7.6
1	P	12.417	0.0	0.0	0.000	6.2
1	P	19.417	0.0	0.0	0.000	6.9
1	P	26.417	0.0	0.0	0.000	6.9
1	P	33.420	0.0	0.0	0.000	7.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B01
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.68	16.60	16.60	1.57	3.83
36.5	33.36	0.880	bott	16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
53.80	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	81.60	81.60	18.25	18.25	18647.9	18647.9
n= 8	152.21	152.21	6.42	30.08	43926.2	18647.9
3n= 24	105.14	105.14	12.54	23.96	30749.8	18647.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
	1021.8	1021.8	1021.8	1021.8	3180.57
n= 8	6841.5	1460.3	1021.8	1021.8	
3n= 24	2451.9	1283.5	1021.8	1021.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B01
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.85
bott	7.86	1.57	10.570	84.00	21.92		18.85

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1150.822

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3180.57	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	2836.95	9.81	0.00	0.00	0.000	5013.83

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B01	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
52.2	229.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3008.3C	-1686.0	2409.6	-1908.3C	2145.3	-1465.7	1684.7	-1636.8
OPER	5013.8C	-2810.0	4015.9	-3180.6C	3575.4	-2442.9	2807.8	-2728.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	866.70 R	0.00 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	866.70 R	0.00 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	687.64 R	0.00 R	528.96	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	726.76 R	0.00 R	559.05	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	0.00 R	515.07	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.47	999.00	1.94	999.00	HS 38.88	70.0
HS20	4.12	999.00	3.24	999.00	HS 64.79	116.6
2F1	7.31	999.00	5.74	999.00	0.00	86.1
3F1	5.20	999.00	4.08	999.00	0.00	93.9
4F1	4.92	999.00	3.86	999.00	0.00	104.3
5C1	5.34	999.00	4.19	999.00	0.00	167.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B01

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B01
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 52.2
Superimposed Dead Load Moment 229.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 770.5	10412.0	-1489.1	2369.2	-1489.1	10130.6	-1770.5	2087.9	-1
OPER 950.8	17165.8	-2669.5	3761.1	-2669.5	16884.4	-2950.8	3479.8	-2

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	687.64 R	528.96	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	726.76 R	559.05	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.69	999.00	2.41	999.00	HS 48.18	86.7
HS20	19.48	999.00	4.01	999.00	HS 80.30	144.5
2F1	34.53	999.00	7.12	999.00	0.00	106.7
3F1	24.55	999.00	5.06	999.00	0.00	116.4
4F1	23.23	999.00	4.79	999.00	0.00	129.3

5C1	25.22	999.00	5.20	999.00	0.00	207.9
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B02 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	121.2	121.2	33.330	0.0
1	P	5.417	0.0	0.0	0.000	21.6
1	P	12.417	0.0	0.0	0.000	17.5
1	P	19.417	0.0	0.0	0.000	19.5
1	P	26.417	0.0	0.0	0.000	19.5
1	P	33.420	0.0	0.0	0.000	21.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B02
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.45	16.70	16.70	1.68	3.89
36.7	33.34	0.940	bott	16.89	16.70	16.70	1.68	3.89

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	86.40	86.40	18.13	18.57	19812.3	19812.3
n= 8	239.31	239.31	1.91	34.79	56774.6	19812.3
3n= 24	137.37	137.37	8.71	27.99	40926.4	19812.3

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1093.0	1066.7	1093.0	1066.7	3458.80
n= 8	29663.6	1632.1	1093.0	1066.7	
3n= 24	4697.3	1462.3	1093.0	1066.7	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B02
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.68	9.940	0.01	0.00	35.28	17.40
bott	8.35	1.68	9.940	84.00	21.61		17.88

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	652.04	652.04	62.169	0.000	1210.073

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3458.80	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2891.40	5353.93	4.97	0.00	0.00	0.000	6167.52

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	603.0

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B02 HS20 HS20
Check Point I. D. 1.474 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
49.0 548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3700.5C	-1803.5	2693.0	-2075.3C	2488.0	-1745.9	1713.0	-1954.9
OPER	6167.5C	-3005.8	4488.3	-3458.8C	4146.7	-2909.8	2855.0	-3258.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.67	999.00	1.84	999.00	HS 36.72	66.1
HS20	4.45	999.00	3.06	999.00	HS 61.21	110.2
2F1	8.48	999.00	5.84	999.00	0.00	87.6
3F1	5.73	999.00	3.94	999.00	0.00	90.7
4F1	5.15	999.00	3.55	999.00	0.00	95.8
5C1	5.88	999.00	4.05	999.00	0.00	161.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B02	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	361.8	-278.3	278.3
OPER	603.0	-463.9	463.9

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B02
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 49.0
Superimposed Dead Load Moment 548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 030.5	44218.8	-1474.3	2743.6	-1433.0	43621.3	-2071.9	2146.0	-2
OPER 384.2	73299.7	-2855.6	4174.2	-2786.7	72702.1	-3453.1	3576.7	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	46.76	999.00	2.30	999.00	HS 46.01	82.8
HS20	77.93	999.00	3.83	999.00	HS 76.68	138.0
2F1	148.67	999.00	7.31	999.00	0.00	109.7
3F1	100.45	999.00	4.94	999.00	0.00	113.7
4F1	90.31	999.00	4.44	999.00	0.00	120.0

5C1	103.02	999.00	5.07	999.00	0.00	202.7
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B03 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	18.6
1	P	12.417	0.0	0.0	0.000	15.0
1	P	19.417	0.0	0.0	0.000	16.8
1	P	26.417	0.0	0.0	0.000	16.8
1	P	33.420	0.0	0.0	0.000	18.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B03
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.50	16.60	16.60	1.57	3.86
36.5	33.36	0.880	bott	16.86	16.60	16.60	1.57	3.86

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	80.60	80.60	18.07	18.43	18428.4	18428.4
n= 8	233.51	233.51	1.49	35.01	53677.7	18428.4
3n= 24	131.57	131.57	8.26	28.24	38915.8	18428.4

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1019.9	999.8	1019.9	999.8	3206.75
n= 8	35966.1	1533.3	1019.9	999.8	
3n= 24	4709.3	1378.2	1019.9	999.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B03
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.64
bott	8.30	1.57	10.570	84.00	21.79		19.05

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1176.145

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3206.75	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B03
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 476.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1682.9	2530.0	-1924.0C	2340.1	-1608.0	1632.7	-1793.5
OPER	5749.4C	-2804.9	4216.6	-3206.7C	3900.2	-2680.0	2721.2	-2989.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.51	999.00	1.75	999.00	HS 35.00	63.0
HS20	4.18	999.00	2.92	999.00	HS 58.34	105.0
2F1	7.98	999.00	5.56	999.00	0.00	83.5
3F1	5.39	999.00	3.76	999.00	0.00	86.5
4F1	4.84	999.00	3.38	999.00	0.00	91.3
5C1	5.53	999.00	3.86	999.00	0.00	154.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B03

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B03
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 476.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 880.6	53748.6	-1389.8	2565.6	-1358.2	53226.2	-1912.2	2043.2	-1
OPER 134.4	89232.7	-2664.6	3927.8	-2612.0	88710.3	-3187.0	3405.4	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	57.05	999.00	2.19	999.00	HS 43.80	78.8
HS20	95.09	999.00	3.65	999.00	HS 73.01	131.4
2F1	181.40	999.00	6.96	999.00	0.00	104.5
3F1	122.57	999.00	4.70	999.00	0.00	108.2
4F1	110.20	999.00	4.23	999.00	0.00	114.2

5C1	125.71	999.00	4.83	999.00	0.00	193.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B04 Symmetry:
 Span Length: Span 1 Span 2 Span 3 Span 4 Span 5
 38.833 0.000 0.000 0.000 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	38.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.3
1	P	12.417	0.0	0.0	0.000	15.6
1	P	19.417	0.0	0.0	0.000	17.5
1	P	26.417	0.0	0.0	0.000	17.5
1	P	33.420	0.0	0.0	0.000	19.3

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B04
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.68	16.60	16.60	1.57	3.83
36.5	33.36	0.880	bott	16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	81.60	81.60	18.25	18.25	18647.9	18647.9
n= 8	234.51	234.51	1.63	34.87	54663.2	18647.9
3n= 24	132.57	132.57	8.45	28.05	39520.9	18647.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1021.8	1021.8	1021.8	1021.8	3180.57
n= 8	33608.1	1567.5	1021.8	1021.8	
3n= 24	4677.3	1408.9	1021.8	1021.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B04
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.85
bott	7.86	1.57	10.570	84.00	21.92		18.85

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1150.822

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3180.57	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B04
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 52.2
Superimposed Dead Load Moment 494.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1686.0	2586.3	-1908.3C	2325.4	-1625.1	1661.3	-1796.2
OPER	5749.4C	-2810.0	4310.5	-3180.6C	3875.6	-2708.5	2768.8	-2993.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.49	999.00	1.78	999.00	HS 35.62	64.1
HS20	4.15	999.00	2.97	999.00	HS 59.36	106.8
2F1	7.93	999.00	5.66	999.00	0.00	84.9
3F1	5.36	999.00	3.83	999.00	0.00	88.0
4F1	4.81	999.00	3.44	999.00	0.00	92.9
5C1	5.49	999.00	3.92	999.00	0.00	156.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B04

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B04
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 52.2
Superimposed Dead Load Moment 494.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 929.9	50063.8	-1382.9	2625.7	-1382.9	49516.8	-1929.9	2078.7	-1
OPER 216.5	83075.0	-2669.5	4011.4	-2669.5	82528.0	-3216.5	3464.4	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02	R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75	R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01	R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70	R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	53.08	999.00	2.23	999.00	HS 44.56	80.2
HS20	88.46	999.00	3.71	999.00	HS 74.27	133.7
2F1	168.76	999.00	7.08	999.00	0.00	106.3
3F1	114.03	999.00	4.79	999.00	0.00	110.1
4F1	102.52	999.00	4.30	999.00	0.00	116.2

5C1	116.94	999.00	4.91	999.00	0.00	196.4
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B05 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.1
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.3
1	P	26.417	0.0	0.0	0.000	17.3
1	P	33.420	0.0	0.0	0.000	19.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B05
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.77	16.60	16.60	1.57	3.84
36.5	33.36	0.880	bott	16.59	16.60	16.60	1.57	3.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	81.10	81.10	18.34	18.16	18538.9	18538.9
n= 8	234.01	234.01	1.62	34.88	54660.6	18538.9
3n= 24	132.07	132.07	8.47	28.03	39508.3	18538.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1010.8	1020.9	1010.8	1020.9	3167.63
n= 8	33692.6	1567.2	1010.8	1020.9	
3n= 24	4665.6	1409.4	1010.8	1020.9	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B05
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	8.30	1.57	10.570	0.01	0.00	37.69	18.95
bott	7.86	1.57	10.570	84.00	21.85		18.75

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1151.856

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3167.63	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B05
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 490.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1667.8	2585.9	-1900.6C	2332.2	-1604.3	1667.8	-1783.4
OPER	5749.4C	-2779.7	4309.8	-3167.6C	3887.0	-2673.9	2779.6	-2972.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.50	999.00	1.79	999.00	HS 35.75	64.4
HS20	4.17	999.00	2.98	999.00	HS 59.59	107.3
2F1	7.95	999.00	5.68	999.00	0.00	85.3
3F1	5.37	999.00	3.84	999.00	0.00	88.3
4F1	4.83	999.00	3.45	999.00	0.00	93.2
5C1	5.51	999.00	3.94	999.00	0.00	157.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B05

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B05
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 490.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 921.6	50312.5	-1370.2	2623.3	-1386.0	49776.9	-1905.8	2087.6	-1
OPER 202.7	83497.1	-2640.8	4015.0	-2667.1	82961.5	-3176.4	3479.4	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	53.36	999.00	2.24	999.00	HS 44.76	80.6
HS20	88.93	999.00	3.73	999.00	HS 74.59	134.3
2F1	169.65	999.00	7.11	999.00	0.00	106.7
3F1	114.63	999.00	4.81	999.00	0.00	110.6
4F1	103.06	999.00	4.32	999.00	0.00	116.7

5C1	117.56	999.00	4.93	999.00	0.00	197.2
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B06 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.2
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.4
1	P	26.417	0.0	0.0	0.000	17.4
1	P	33.420	0.0	0.0	0.000	19.2

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B06
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.82	16.60	16.60	1.57	3.85
36.5	33.36	0.880	bott	16.54	16.60	16.60	1.57	3.85

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	80.80	80.80	18.39	18.11	18490.7	18490.7
n= 8	233.71	233.71	1.61	34.89	54649.2	18490.7
3n= 24	131.77	131.77	8.47	28.03	39507.3	18490.7

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1005.3	1021.2	1005.3	1021.2	3160.16
n= 8	33868.0	1566.5	1005.3	1021.2	
3n= 24	4663.3	1409.6	1005.3	1021.2	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B06
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	8.30	1.57	10.570	0.01	0.00	37.69	19.01
bott	7.86	1.57	10.570	84.00	21.80		18.69

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1151.527

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3160.16	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B06
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 491.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1658.8	2584.7	-1896.1C	2331.3	-1598.3	1665.9	-1780.9
OPER	5749.4C	-2764.6	4307.8	-3160.2C	3885.4	-2663.8	2776.5	-2968.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.50	999.00	1.79	999.00	HS 35.71	64.3
HS20	4.16	999.00	2.98	999.00	HS 59.52	107.1
2F1	7.95	999.00	5.68	999.00	0.00	85.2
3F1	5.37	999.00	3.84	999.00	0.00	88.2
4F1	4.83	999.00	3.45	999.00	0.00	93.1
5C1	5.51	999.00	3.93	999.00	0.00	157.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B06	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B06
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 491.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 923.0	50560.4	-1361.0	2622.9	-1385.8	50023.2	-1898.2	2085.7	-1
OPER 205.0	83909.2	-2626.4	4013.3	-2667.8	83372.0	-3163.6	3476.2	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	53.62	999.00	2.24	999.00	HS 44.71	80.5
HS20	89.37	999.00	3.73	999.00	HS 74.52	134.1
2F1	170.49	999.00	7.11	999.00	0.00	106.6
3F1	115.19	999.00	4.80	999.00	0.00	110.5
4F1	103.57	999.00	4.32	999.00	0.00	116.6

5C1	118.14	999.00	4.93	999.00	0.00	197.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B07 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.1
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.3
1	P	26.417	0.0	0.0	0.000	17.3
1	P	33.420	0.0	0.0	0.000	19.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B07
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.85	16.60	16.60	1.57	3.86
36.5	33.36	0.880	bott	16.51	16.60	16.60	1.57	3.86

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	80.50	80.50	18.42	18.08	18471.1	18471.1
n= 8	233.41	233.41	1.61	34.89	54633.2	18471.1
3n= 24	131.47	131.47	8.47	28.03	39506.9	18471.1

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1002.8	1021.6	1002.8	1021.6	3156.25
n= 8	34037.9	1565.7	1002.8	1021.6	
3n= 24	4664.4	1409.4	1002.8	1021.6	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B07
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	8.30	1.57	10.570	0.01	0.00	37.69	19.04
bott	7.86	1.57	10.570	84.00	21.77		18.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1151.005

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3156.25	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B07
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 490.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1654.6	2583.3	-1893.8C	2332.2	-1594.1	1665.8	-1778.1
OPER	5749.4C	-2757.6	4305.5	-3156.3C	3887.0	-2656.9	2776.3	-2963.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.50	999.00	1.79	999.00	HS 35.71	64.3
HS20	4.17	999.00	2.98	999.00	HS 59.52	107.1
2F1	7.95	999.00	5.68	999.00	0.00	85.2
3F1	5.37	999.00	3.84	999.00	0.00	88.2
4F1	4.83	999.00	3.45	999.00	0.00	93.1
5C1	5.51	999.00	3.93	999.00	0.00	157.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	B07	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B07
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 490.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 922.8	50814.7	-1357.6	2621.2	-1387.2	50279.1	-1893.2	2085.6	-1
OPER 204.7	84334.1	-2619.7	4011.6	-2669.0	83798.4	-3155.4	3476.0	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02	R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75	R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01	R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70	R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	53.90	999.00	2.24	999.00	HS 44.71	80.5
HS20	89.82	999.00	3.73	999.00	HS 74.52	134.1
2F1	171.36	999.00	7.11	999.00	0.00	106.6
3F1	115.78	999.00	4.80	999.00	0.00	110.5
4F1	104.10	999.00	4.32	999.00	0.00	116.6

5C1	118.75	999.00	4.93	999.00	0.00	197.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B08 Symmetry:
 Span Length: Span 1 38.833 Span 2 0.000 Span 3 0.000 Span 4 0.000 Span 5 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.3
1	P	12.417	0.0	0.0	0.000	15.6
1	P	19.417	0.0	0.0	0.000	17.5
1	P	26.417	0.0	0.0	0.000	17.5
1	P	33.420	0.0	0.0	0.000	19.3

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B08
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.49	16.60	16.60	1.57	3.86
36.5	33.36	0.880	bott	16.87	16.60	16.60	1.57	3.86

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	80.40	80.40	18.06	18.44	18291.6	18291.6
n= 8	233.31	233.31	1.47	35.03	53447.4	18291.6
3n= 24	131.37	131.37	8.24	28.26	38742.7	18291.6

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1012.7	992.1	1012.7	992.1	3207.53
n= 8	36354.3	1525.8	1012.7	992.1	
3n= 24	4702.5	1370.9	1012.7	992.1	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B08
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	8.30	1.57	10.570	0.01	0.00	37.69	18.64
bott	8.30	1.57	10.570	84.00	21.75		19.06

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1185.292

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3207.53	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B08
Check Point I. D. 1.474
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 494.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1670.9	2517.5	-1924.5C	2329.3	-1609.6	1612.3	-1804.7
OPER	5749.4C	-2784.9	4195.9	-3207.5C	3882.2	-2682.6	2687.2	-3007.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.50	999.00	1.73	999.00	HS 34.57	62.2
HS20	4.16	999.00	2.88	999.00	HS 57.61	103.7
2F1	7.94	999.00	5.49	999.00	0.00	82.4
3F1	5.36	999.00	3.71	999.00	0.00	85.4
4F1	4.82	999.00	3.34	999.00	0.00	90.1
5C1	5.50	999.00	3.81	999.00	0.00	152.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B08	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B08
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 494.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 879.4	54247.3	-1371.2	2559.5	-1338.9	53706.9	-1911.6	2019.1	-1
OPER 132.3	90051.9	-2645.6	3905.6	-2591.8	89511.4	-3186.1	3365.2	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91	R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02	R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75	R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01	R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70	R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	57.57	999.00	2.16	999.00	HS 43.29	77.9
HS20	95.95	999.00	3.61	999.00	HS 72.14	129.9
2F1	183.04	999.00	6.88	999.00	0.00	103.2
3F1	123.68	999.00	4.65	999.00	0.00	106.9
4F1	111.19	999.00	4.18	999.00	0.00	112.9

5C1	126.84	999.00	4.77	999.00	0.00	190.7
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B09 Symmetry:
 Span Length: Span 1 Span 2 Span 3 Span 4 Span 5
 38.833 0.000 0.000 0.000 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	15.000	1	0		0.0	0.0
1	2	3.000	2	0		0.0	0.0
1	3	20.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	18.6
1	P	12.417	0.0	0.0	0.000	15.0
1	P	19.417	0.0	0.0	0.000	16.8
1	P	26.417	0.0	0.0	0.000	16.8
1	P	33.420	0.0	0.0	0.000	18.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B09
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.33	16.60	16.60	1.57	3.87
36.5	33.36	0.880	bott	17.03	16.60	16.60	1.57	3.87

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	79.90	79.90	17.90	18.60	18159.9	18159.9
n= 8	232.81	232.81	1.38	35.12	52758.9	18159.9
3n= 24	130.87	130.87	8.11	28.39	38311.2	18159.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1014.5	976.3	1014.5	976.3	3231.07
n= 8	38180.4	1502.3	1014.5	976.3	
3n= 24	4726.8	1349.2	1014.5	976.3	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B09
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.45
bott	8.30	1.57	10.570	84.00	21.69		19.24

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1204.428

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3231.07	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	5353.93	4.53	0.00	0.00	0.000	5749.40

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B09 HS20 HS20
Check Point I. D. 1.474 2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 476.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	3449.6C	-1674.0	2478.8	-1938.6C	2340.1	-1601.1	1593.4	-1804.7
OPER	5749.4C	-2790.0	4131.4	-3231.1C	3900.2	-2668.5	2655.6	-3007.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	0.00 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	0.00 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	0.00 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	0.00 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.51	999.00	1.71	999.00	HS 34.16	61.5
HS20	4.18	999.00	2.85	999.00	HS 56.93	102.5
2F1	7.98	999.00	5.43	999.00	0.00	81.5
3F1	5.39	999.00	3.67	999.00	0.00	84.4
4F1	4.84	999.00	3.30	999.00	0.00	89.1
5C1	5.53	999.00	3.76	999.00	0.00	150.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B09

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B09
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 476.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 843.8	57028.7	-1381.3	2516.6	-1321.4	56506.3	-1903.7	1994.2	-1
OPER 073.0	94699.5	-2650.5	3846.1	-2550.7	94177.1	-3172.9	3323.7	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	60.57	999.00	2.14	999.00	HS 42.75	77.0
HS20	100.95	999.00	3.56	999.00	HS 71.26	128.3
2F1	192.58	999.00	6.80	999.00	0.00	102.0
3F1	130.12	999.00	4.59	999.00	0.00	105.6
4F1	116.99	999.00	4.13	999.00	0.00	111.5

5C1	133.45	999.00	4.71	999.00	0.00	188.4
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B10 Symmetry:
 Span Length: Span 1 Span 2 Span 3 Span 4 Span 5
 38.833 0.000 0.000 0.000 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	38.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	2.750	121.2	121.2	33.330	0.0
1	P	5.417	0.0	0.0	0.000	21.6
1	P	12.417	0.0	0.0	0.000	17.5
1	P	19.417	0.0	0.0	0.000	19.5
1	P	26.417	0.0	0.0	0.000	19.5
1	P	33.420	0.0	0.0	0.000	21.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B10
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.67	16.70	16.70	1.68	3.86
36.7	33.34	0.940	bott	16.67	16.70	16.70	1.68	3.86

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
116.50	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	87.60	87.60	18.35	18.35	20135.6	20135.6
n= 8	240.51	240.51	2.08	34.62	58044.4	20135.6
3n= 24	138.57	138.57	8.93	27.77	41722.0	20135.6

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1097.3	1097.3	1097.3	1097.3	3424.10
n= 8	27965.5	1676.4	1097.3	1097.3	
3n= 24	4669.5	1502.7	1097.3	1097.3	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B10
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.68	9.940	0.01	0.00	35.28	17.64
bott	7.88	1.68	9.940	84.00	21.75		17.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	652.04	652.04	62.169	0.000	1176.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3424.10	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2891.40	5353.93	4.97	0.00	0.00	0.000	6167.52

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	603.0

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B10	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
56.1	548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3700.5C	-1810.6	2766.1	-2054.5C	2483.8	-1755.5	1765.0	-1943.1
OPER	6167.5C	-3017.6	4610.1	-3424.1C	4139.6	-2925.8	2941.6	-3238.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.66	999.00	1.89	999.00	HS 37.84	68.1
HS20	4.44	999.00	3.15	999.00	HS 63.06	113.5
2F1	8.47	999.00	6.01	999.00	0.00	90.2
3F1	5.72	999.00	4.06	999.00	0.00	93.5
4F1	5.14	999.00	3.65	999.00	0.00	98.7
5C1	5.87	999.00	4.17	999.00	0.00	166.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	B10	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	361.8	-278.3	278.3
OPER	603.0	-463.9	463.9

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B10
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 56.1
Superimposed Dead Load Moment 548.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 082.8	41612.2	-1478.2	2813.8	-1478.2	41007.6	-2082.8	2209.2	-2
OPER 471.3	68950.6	-2866.7	4286.6	-2866.7	68346.0	-3471.3	3682.0	-3

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	723.75 R	556.73	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	805.01 R	619.24	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	43.96	999.00	2.37	999.00	HS 47.36	85.3
HS20	73.26	999.00	3.95	999.00	HS 78.94	142.1
2F1	139.76	999.00	7.53	999.00	0.00	112.9
3F1	94.43	999.00	5.09	999.00	0.00	117.0
4F1	84.90	999.00	4.57	999.00	0.00	123.5

5C1	96.85	999.00	5.22	999.00	0.00	208.7
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1
 Floor Beam Spacing 25.00

Comments:

Member I. D. B11 Symmetry:
 Span Length: Span 1 Span 2 Span 3 Span 4 Span 5
 38.833 0.000 0.000 0.000 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	38.833	1	0		0.0	0.0

Range Length -- Composite:

Span No.	Range No.	Range Length	Composite Code
1	1	38.833	C

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	1.917	235.5	235.5	35.000	0.0
1	P	5.417	0.0	0.0	0.000	7.6
1	P	12.417	0.0	0.0	0.000	6.2
1	P	19.417	0.0	0.0	0.000	6.9
1	P	26.417	0.0	0.0	0.000	6.9
1	P	33.420	0.0	0.0	0.000	7.6

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B11
 Check Point I. D. 1.474

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	4500.	4500.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	16.68	16.60	16.60	1.57	3.83
36.5	33.36	0.880	bott	16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Reinf. Dy	Fy
53.80	10.50	7.25	11.2	5.8	60000.

	Section Gross	Area Net	Neutral Axis		Moment of Inertia	
			Top	Bott.	Positive Bending	Negative Bending
	81.60	81.60	18.25	18.25	18647.9	18647.9
n= 8	152.21	152.21	6.42	30.08	43926.2	18647.9
3n= 24	105.14	105.14	12.54	23.96	30749.8	18647.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1021.8	1021.8	1021.8	1021.8	3180.57
n= 8	6841.5	1460.3	1021.8	1021.8	
3n= 24	2451.9	1283.5	1021.8	1021.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B11
 Check Point I. D. 1.474

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.85
bott	7.86	1.57	10.570	84.00	21.92		18.85

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1150.822

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3180.57	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	2836.95	9.81	0.00	0.00	0.000	5013.83

TOP			BOTTOM		
Mu (pier)	Ms (pier)	A_FAC	Mu (pier)	Ms (pier)	A_FAC
0.00	0.00	0.000	0.00	0.00	0.000

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B11	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
52.2	229.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3008.3C	-1686.0	2409.6	-1908.3C	2145.3	-1465.7	1684.7	-1636.8
OPER	5013.8C	-2810.0	4015.9	-3180.6C	3575.4	-2442.9	2807.8	-2728.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	866.70 R	0.00 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	866.70 R	0.00 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	0.00 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	687.64 R	0.00 R	528.96	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	726.76 R	0.00 R	559.05	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	0.00 R	515.07	28.42	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.47	999.00	1.94	999.00	HS 38.88	70.0
HS20	4.12	999.00	3.24	999.00	HS 64.79	116.6
2F1	7.31	999.00	5.74	999.00	0.00	86.1
3F1	5.20	999.00	4.08	999.00	0.00	93.9
4F1	4.92	999.00	3.86	999.00	0.00	104.3
5C1	5.34	999.00	4.19	999.00	0.00	167.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

B11

Check Point I. D.

1.474

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	0.00	999.0
3F1	999.00	999.00	0.00	999.0
4F1	999.00	999.00	0.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. B11
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 52.2
Superimposed Dead Load Moment 229.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 770.5	10412.0	-1489.1	2369.2	-1489.1	10130.6	-1770.5	2087.9	-1
OPER 950.8	17165.8	-2669.5	3761.1	-2669.5	16884.4	-2950.8	3479.8	-2

Live Load Effect

Impact Factors: +bend - .300 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	866.70	R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	866.70	R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02	R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	687.64	R	528.96	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	726.76	R	559.05	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	669.59	R	515.07	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.69	999.00	2.41	999.00	HS 48.18	86.7
HS20	19.48	999.00	4.01	999.00	HS 80.30	144.5
2F1	34.53	999.00	7.12	999.00	0.00	106.7
3F1	24.55	999.00	5.06	999.00	0.00	116.4
4F1	23.23	999.00	4.79	999.00	0.00	129.3

5C1	25.22	999.00	5.20	999.00	0.00	207.9
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D.	S01					Symmetry:
Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5	
	25.000	25.000	25.000	25.000	25.000	
	Span 6	Span 7	Span 8	Span 9	Span 10	
	25.000	25.000	25.000	25.000	25.000	

Range Length -- Non-Composite:							
Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	25.000	1	0		0.0	0.0
2	1	25.000	2	0		0.0	0.0
3	1	25.000	2	0		0.0	0.0
4	1	25.000	2	0		0.0	0.0
5	1	25.000	2	0		0.0	0.0
6	1	25.000	2	0		0.0	0.0
7	1	25.000	2	0		0.0	0.0
8	1	25.000	2	0		0.0	0.0
9	1	25.000	2	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:						
Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	765.0	765.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	765.0	765.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	765.0	765.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	765.0	765.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	765.0	765.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	765.0	765.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	765.0	765.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	765.0	765.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	765.0	765.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	765.0	765.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.4	74.4
OPER	172.1	-140.7	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.40	32.02	-1.84	24.63	-2.36	24.72	-1.82	19.01
OPER	HS20	-2.40	32.02	-1.84	24.63	-2.36	24.72	-1.82	19.01
OPER	2F1	-1.63	18.71	-1.25	14.39	0.00	0.00	0.00	0.00
OPER	3F1	-2.35	25.85	-1.80	19.89	0.00	0.00	0.00	0.00
OPER	4F1	-2.53	26.84	-1.95	20.64	0.00	0.00	0.00	0.00
OPER	5C1	-2.07	25.16	-1.59	19.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	35.22	2.32	HS 46.48	83.7
HS20	58.71	3.87	HS 77.46	139.4
2F1	86.30	6.63	0.00	99.4
3F1	59.99	4.80	0.00	110.3
4F1	55.59	4.62	0.00	124.8
5C1	68.14	4.93	0.00	197.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.100 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	204.8	-202.6	180.7	-226.8
OPER	359.7C	-319.4	319.4	-359.7C	341.4	-337.7	301.2	-378.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50			
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00		
OPER	HS20	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50			
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00		
OPER	2F1	40.11 R	30.86	12.50	0.0	0.00	0.00	0.00			
		-4.08 R	-3.14	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	54.73 R	42.10	16.50	0.0	0.00	0.00	0.00			
		-5.86 R	-4.51	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	55.94 R	43.03	20.50	0.0	0.00	0.00	0.00			
		-6.35 R	-4.89	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	53.15 R	40.89	18.50	0.0	0.00	0.00	0.00			
		-5.54 R	-4.26	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	32.39	2.70	36.26	HS 54.01	97.2
HS20	5.10	53.99	4.50	60.43	HS 90.02	162.0
2F1	8.51	82.84	7.51	92.71	0.00	112.6
3F1	6.24	57.58	5.50	64.45	0.00	126.6
4F1	6.10	53.17	5.38	59.51	0.00	145.3
5C1	6.42	60.95	5.67	68.21	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.2	75.7
OPER	172.1	-138.6	126.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.95	26.76	-2.27	20.59	-3.16	21.20	-2.43	16.31
OPER	HS20	-2.95	26.76	-2.27	20.59	-3.16	21.20	-2.43	16.31
OPER	2F1	-1.85	16.05	-1.42	12.34	0.00	0.00	0.00	0.00
OPER	3F1	-2.35	21.89	-1.80	16.84	0.00	0.00	0.00	0.00
OPER	4F1	-2.53	22.38	-1.95	17.21	0.00	0.00	0.00	0.00
OPER	5C1	-3.69	21.26	-2.84	16.36	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.29	2.83	HS 56.55	101.8
HS20	43.82	4.71	HS 94.24	169.6
2F1	75.09	7.86	0.00	117.9
3F1	59.10	5.76	0.00	132.5
4F1	54.77	5.64	0.00	152.2
5C1	37.57	5.93	0.00	237.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.100 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 210.3	206.6	-192.0	206.6	-192.0	188.4	-210.3	188.4	-
OPER 350.5	332.2	-332.2	332.2	-332.2	313.9	-350.5	313.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50	
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00
OPER	HS20	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50	
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00
OPER	2F1	40.11 R	30.86	12.50	0.0	0.00	0.00	0.00	
		-4.08 R	-3.14	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.73 R	42.10	16.50	0.0	0.00	0.00	0.00	
		-5.86 R	-4.51	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.94 R	43.03	20.50	0.0	0.00	0.00	0.00	
		-6.35 R	-4.89	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.15 R	40.89	18.50	0.0	0.00	0.00	0.00	
		-5.54 R	-4.26	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.82	33.62	2.82	33.62	HS 56.30	101.3
HS20	4.69	56.03	4.69	56.03	HS 93.84	168.9
2F1	7.83	85.97	7.83	85.97	0.00	117.4
3F1	5.74	59.76	5.74	59.76	0.00	131.9
4F1	5.61	55.18	5.61	55.18	0.00	151.5

5C1

5.91

63.25

5.91

63.25

0.00

236.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.0	-210.4	172.9	-234.6
OPER	359.7C	-319.4	319.4	-359.7C	328.4	-350.7	288.1	-391.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	HS20	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	2F1	67.31 R	51.78	15.00	0.0	0.00	0.00	0.00	0.00
		-8.15 R	-6.27	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.42 R	69.55	19.00	0.0	0.00	0.00	0.00	0.00
		-11.73 R	-9.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.72 R	69.79	23.00	0.0	0.00	0.00	0.00	0.00
		-12.70 R	-9.77	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.66 R	67.43	21.00	0.0	0.00	0.00	0.00	0.00
		-11.08 R	-8.52	47.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	16.82	1.59	18.75	HS 31.76	57.2
HS20	3.02	28.04	2.65	31.25	HS 52.94	95.3
2F1	4.88	43.02	4.28	47.96	0.00	64.2
3F1	3.63	29.90	3.19	33.33	0.00	73.3
4F1	3.62	27.61	3.18	30.78	0.00	85.7
5C1	3.75	31.65	3.29	35.28	0.00	131.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.4	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	103.3	-81.9	76.9
OPER	172.1	-136.5	128.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.87	21.77	-4.52	16.75	-5.76	17.86	-4.43	13.74
OPER	HS20	-5.87	21.77	-4.52	16.75	-5.76	17.86	-4.43	13.74
OPER	2F1	-3.67	13.46	-2.82	10.36	0.00	0.00	0.00	0.00
OPER	3F1	-3.75	18.08	-2.88	13.91	0.00	0.00	0.00	0.00
OPER	4F1	-3.09	18.14	-2.37	13.96	0.00	0.00	0.00	0.00
OPER	5C1	-5.68	17.53	-4.37	13.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	13.95	3.53	HS 70.67	127.2
HS20	23.25	5.89	HS 117.78	212.0
2F1	37.20	9.52	0.00	142.9
3F1	36.43	7.09	0.00	163.1
4F1	44.24	7.07	0.00	190.8
5C1	24.04	7.31	0.00	292.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.1	211.8	-186.8	211.8	-186.8	180.5	-218.1	180.5	-
OPER 363.5	332.2	-332.2	332.2	-332.2	300.9	-363.5	300.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	HS20	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	2F1	67.31 R	51.78	15.00	0.0	0.00	0.00	0.00	0.00
		-8.15 R	-6.27	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.42 R	69.55	19.00	0.0	0.00	0.00	0.00	0.00
		-11.73 R	-9.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.72 R	69.79	23.00	0.0	0.00	0.00	0.00	0.00
		-12.70 R	-9.77	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.66 R	67.43	21.00	0.0	0.00	0.00	0.00	0.00
		-11.08 R	-8.52	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.66	17.43	1.66	17.43	HS 33.17	59.7
HS20	2.76	29.06	2.76	29.06	HS 55.29	99.5
2F1	4.47	44.58	4.47	44.58	0.00	67.1
3F1	3.33	30.99	3.33	30.99	0.00	76.5
4F1	3.32	28.61	3.32	28.61	0.00	89.5

5C1	3.43	32.80	3.43	32.80	0.00	137.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.1	168.2	-239.3
OPER	359.7C	-319.4	319.4	-359.7C	320.6	-358.5	280.3	-398.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50			
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00		
OPER	HS20	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50			
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00		
OPER	2F1	82.40 R	63.39	17.50	0.0	0.00	0.00	0.00	0.00		
		-12.23 R	-9.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	108.59 R	83.53	21.50	0.0	0.00	0.00	0.00	0.00		
		-17.59 R	-13.53	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.33 R	87.18	21.50	0.0	0.00	0.00	0.00	0.00		
		-19.06 R	-14.66	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	105.12 R	80.86	23.50	0.0	0.00	0.00	0.00	0.00		
		-16.62 R	-12.79	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.50	11.46	1.31	12.75	HS 26.21	47.2
HS20	2.50	19.11	2.18	21.25	HS 43.68	78.6
2F1	3.89	29.32	3.40	32.61	0.00	51.0
3F1	2.95	20.38	2.58	22.67	0.00	59.4
4F1	2.83	18.82	2.47	20.93	0.00	66.8
5C1	3.05	21.57	2.67	23.99	0.00	106.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.7	78.2
OPER	172.1	-134.4	130.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.72	17.11	-6.71	13.16	-8.44	14.73	-6.49	11.33
OPER	HS20	-8.72	17.11	-6.71	13.16	-8.44	14.73	-6.49	11.33
OPER	2F1	-5.45	10.99	-4.19	8.45	0.00	0.00	0.00	0.00
OPER	3F1	-6.82	14.48	-5.25	11.14	0.00	0.00	0.00	0.00
OPER	4F1	-5.62	14.28	-4.32	10.98	0.00	0.00	0.00	0.00
OPER	5C1	-8.44	14.02	-6.49	10.78	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.25	4.57	HS 91.37	164.5
HS20	15.41	7.61	HS 152.28	274.1
2F1	24.66	11.86	0.00	177.9
3F1	19.70	9.00	0.00	207.0
4F1	23.93	9.13	0.00	246.5
5C1	15.93	9.30	0.00	371.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.8	215.0	-183.7	215.0	-183.7	175.9	-222.8	175.9	-
OPER 371.3	332.2	-332.2	332.2	-332.2	293.1	-371.3	293.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50	
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00
OPER	HS20	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50	
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00
OPER	2F1	82.40 R	63.39	17.50	0.0	0.00	0.00	0.00	
		-12.23 R	-9.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.59 R	83.53	21.50	0.0	0.00	0.00	0.00	
		-17.59 R	-13.53	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.33 R	87.18	21.50	0.0	0.00	0.00	0.00	
		-19.06 R	-14.66	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.12 R	80.86	23.50	0.0	0.00	0.00	0.00	
		-16.62 R	-12.79	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.37	11.87	1.37	11.87	HS 27.40	49.3
HS20	2.28	19.79	2.28	19.79	HS 45.67	82.2
2F1	3.56	30.36	3.56	30.36	0.00	53.4
3F1	2.70	21.10	2.70	21.10	0.00	62.1
4F1	2.59	19.49	2.59	19.49	0.00	69.8

5C1	2.79	22.34	2.79	22.34	0.00	111.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.7	38.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	190.8	-216.6	166.7	-240.8
OPER	359.7C	-319.4	319.4	-359.7C	318.0	-361.1	277.8	-401.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00			
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00		
OPER	HS20	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00			
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00		
OPER	2F1	86.55 R	66.58	20.00	0.0	0.00	0.00	0.00			
		-16.31 R	-12.54	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.46 R	88.82	20.00	0.0	0.00	0.00	0.00			
		-23.46 R	-18.05	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	123.73 R	95.18	24.00	0.0	0.00	0.00	0.00			
		-25.41 R	-19.54	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	110.37 R	84.90	22.00	0.0	0.00	0.00	0.00			
		-22.16 R	-17.05	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.48	8.66	1.30	9.62	HS 25.92	46.6
HS20	2.47	14.43	2.16	16.04	HS 43.19	77.7
2F1	3.67	22.14	3.21	24.61	0.00	48.1
3F1	2.75	15.39	2.41	17.11	0.00	55.3
4F1	2.57	14.21	2.24	15.80	0.00	60.6
5C1	2.88	16.29	2.52	18.11	0.00	100.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.3	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-11.47	12.86	-8.82	9.89	-11.17	11.81	-8.59	9.09
OPER	HS20	-11.47	12.86	-8.82	9.89	-11.17	11.81	-8.59	9.09
OPER	2F1	-7.17	8.65	-5.51	6.66	0.00	0.00	0.00	0.00
OPER	3F1	-9.82	11.13	-7.55	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-9.12	10.60	-7.01	8.16	0.00	0.00	0.00	0.00
OPER	5C1	-11.03	10.92	-8.48	8.40	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.93	6.18	HS 123.53	222.4
HS20	11.54	10.29	HS 205.89	370.6
2F1	18.47	15.30	0.00	229.5
3F1	13.48	11.90	0.00	273.7
4F1	14.52	12.49	0.00	337.1
5C1	12.00	12.12	0.00	480.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.7	38.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 224.3	216.0	-182.7	216.0	-182.7	174.3	-224.3	174.3	-
OPER 373.9	332.2	-332.2	332.2	-332.2	290.5	-373.9	290.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00	
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00
OPER	HS20	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00	
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00
OPER	2F1	86.55 R	66.58	20.00	0.0	0.00	0.00	0.00	
		-16.31 R	-12.54	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.46 R	88.82	20.00	0.0	0.00	0.00	0.00	
		-23.46 R	-18.05	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	123.73 R	95.18	24.00	0.0	0.00	0.00	0.00	
		-25.41 R	-19.54	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	110.37 R	84.90	22.00	0.0	0.00	0.00	0.00	
		-22.16 R	-17.05	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.36	8.97	1.36	8.97	HS 27.11	48.8
HS20	2.26	14.94	2.26	14.94	HS 45.18	81.3
2F1	3.36	22.93	3.36	22.93	0.00	50.4
3F1	2.52	15.94	2.52	15.94	0.00	57.9
4F1	2.35	14.72	2.35	14.72	0.00	63.4

5C1	2.63	16.87	2.63	16.87	0.00	105.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.0	168.3	-239.2
OPER	359.7C	-319.4	319.4	-359.7C	320.7	-358.4	280.4	-398.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.30 L	93.31	-15.50	0.0	99.09	76.22	12.50			
		-31.27 R	-24.06	58.00	0.0	-23.11	-17.77	35.00	0.00		
OPER	HS20	121.30 L	93.31	-15.50	0.0	99.09	76.22	12.50			
		-31.27 R	-24.06	58.00	0.0	-23.11	-17.77	35.00	0.00		
OPER	2F1	82.85 L	63.73	2.50	0.0	0.00	0.00	0.00			
		-20.38 R	-15.68	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	113.07 R	86.98	22.50	0.0	0.00	0.00	0.00			
		-29.32 R	-22.56	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	120.28 L	92.52	-1.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	107.89 R	82.99	24.50	0.0	0.00	0.00	0.00			
		-27.70 R	-21.31	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.59	6.88	1.39	7.65	HS 27.74	49.9
HS20	2.64	11.46	2.31	12.75	HS 46.24	83.2
2F1	3.87	17.58	3.38	19.56	0.00	50.8
3F1	2.84	12.22	2.48	13.60	0.00	57.0
4F1	2.67	11.28	2.33	12.55	0.00	63.0
5C1	2.97	12.94	2.60	14.39	0.00	104.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	1.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-2.0	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.2	80.7
OPER	172.1	-130.3	134.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.07	9.70	-11.59	7.46	-13.93	9.15	-10.71	7.04
OPER	HS20	-15.07	9.70	-11.59	7.46	-13.93	9.15	-10.71	7.04
OPER	2F1	-9.72	6.50	-7.47	5.00	0.00	0.00	0.00	0.00
OPER	3F1	-12.69	8.08	-9.76	6.22	0.00	0.00	0.00	0.00
OPER	4F1	-12.77	7.40	-9.82	5.69	0.00	0.00	0.00	0.00
OPER	5C1	-13.46	8.38	-10.35	6.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.19	8.32	HS 103.74	186.7
HS20	8.65	13.86	HS 172.91	311.2
2F1	13.40	20.70	0.00	201.1
3F1	10.26	16.64	0.00	236.0
4F1	10.20	18.18	0.00	275.5
5C1	9.68	16.05	0.00	387.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.7	214.9	-183.7	214.9	-183.7	175.9	-222.7	175.9	-
OPER 371.2	332.2	-332.2	332.2	-332.2	293.2	-371.2	293.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	121.30 L	93.31	-15.50	0.0	99.09	76.22	12.50	
		-31.27 R	-24.06	58.00	0.0	-23.11	-17.77	35.00	0.00
OPER	HS20	121.30 L	93.31	-15.50	0.0	99.09	76.22	12.50	
		-31.27 R	-24.06	58.00	0.0	-23.11	-17.77	35.00	0.00
OPER	2F1	82.85 L	63.73	2.50	0.0	0.00	0.00	0.00	
		-20.38 R	-15.68	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	113.07 R	86.98	22.50	0.0	0.00	0.00	0.00	
		-29.32 R	-22.56	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	120.28 L	92.52	-1.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	107.89 R	82.99	24.50	0.0	0.00	0.00	0.00	
		-27.70 R	-21.31	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	7.12	1.45	7.12	HS 29.01	52.2
HS20	2.42	11.87	2.42	11.87	HS 48.35	87.0
2F1	3.54	18.21	3.54	18.21	0.00	53.1
3F1	2.59	12.66	2.59	12.66	0.00	59.6
4F1	2.44	11.69	2.44	11.69	0.00	65.8

5C1	2.72	13.40	2.72	13.40	0.00	108.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 1.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment 2.8
 Superimposed Dead Load Moment 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.3	-210.2	173.1	-234.4
OPER	359.7C	-319.4	319.4	-359.7C	328.8	-350.3	288.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00			
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00		
OPER	HS20	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00			
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00		
OPER	2F1	77.81 L	59.86	5.00	0.0	0.00	0.00	0.00			
		-24.46 R	-18.81	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 L	77.18	5.00	0.0	0.00	0.00	0.00			
		-35.19 R	-27.07	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.73 L	82.87	1.00	0.0	0.00	0.00	0.00			
		-38.11 R	-29.32	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.63 L	75.87	3.00	0.0	0.00	0.00	0.00			
		-33.25 R	-25.57	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	5.60	1.50	6.24	HS 30.06	54.1
HS20	2.86	9.33	2.51	10.41	HS 50.11	90.2
2F1	4.22	14.32	3.71	15.97	0.00	55.6
3F1	3.28	9.96	2.88	11.10	0.00	66.1
4F1	3.05	9.19	2.68	10.25	0.00	72.3
5C1	3.33	10.54	2.92	11.75	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

1.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.9	82.0
OPER	172.1	-128.1	136.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.19	6.09	-14.00	4.69	-16.67	6.75	-12.82	5.19
OPER	HS20	-18.19	6.09	-14.00	4.69	-16.67	6.75	-12.82	5.19
OPER	2F1	-12.15	4.55	-9.34	3.50	0.00	0.00	0.00	0.00
OPER	3F1	-15.85	5.39	-12.20	4.15	0.00	0.00	0.00	0.00
OPER	4F1	-16.26	4.61	-12.51	3.54	0.00	0.00	0.00	0.00
OPER	5C1	-15.75	6.27	-12.11	4.82	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.22	12.15	HS 84.48	152.1
HS20	7.04	20.25	HS 140.80	253.4
2F1	10.54	30.06	0.00	158.2
3F1	8.08	25.33	0.00	185.8
4F1	7.88	29.66	0.00	212.7
5C1	8.14	21.81	0.00	325.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.600 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 217.9	211.7	-187.0	211.7	-187.0	180.8	-217.9	180.8	-
OPER 363.1	332.2	-332.2	332.2	-332.2	301.3	-363.1	301.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00	
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00
OPER	HS20	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00	
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00
OPER	2F1	77.81 L	59.86	5.00	0.0	0.00	0.00	0.00	
		-24.46 R	-18.81	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 L	77.18	5.00	0.0	0.00	0.00	0.00	
		-35.19 R	-27.07	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.73 L	82.87	1.00	0.0	0.00	0.00	0.00	
		-38.11 R	-29.32	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.63 L	75.87	3.00	0.0	0.00	0.00	0.00	
		-33.25 R	-25.57	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.80	1.57	5.80	HS 31.40	56.5
HS20	2.62	9.68	2.62	9.68	HS 52.33	94.2
2F1	3.87	14.85	3.87	14.85	0.00	58.1
3F1	3.00	10.32	3.00	10.32	0.00	69.1
4F1	2.80	9.53	2.80	9.53	0.00	75.5

5C1	3.06	10.92	3.06	10.92	0.00	122.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 1.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.3	-202.2	181.1	-226.4
OPER	359.7C	-319.4	319.4	-359.7C	342.1	-337.0	301.8	-377.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50			
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00		
OPER	HS20	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50			
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00		
OPER	2F1	63.30 L	48.69	7.50	0.0	0.00	0.00	0.00			
		-28.54 R	-21.95	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.80 L	62.93	3.50	0.0	0.00	0.00	0.00			
		-41.05 R	-31.58	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.88 L	64.52	3.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.06 R	62.36	64.50	0.0	0.00	0.00	0.00			
		-38.79 R	-29.84	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.06	4.62	1.82	5.17	HS 36.39	65.5
HS20	3.44	7.70	3.03	8.62	HS 60.65	109.2
2F1	5.40	11.81	4.77	13.22	0.00	71.5
3F1	4.18	8.21	3.69	9.19	0.00	84.9
4F1	4.08	7.58	3.60	8.48	0.00	97.2
5C1	4.22	8.69	3.72	9.73	0.00	148.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

1.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.5 -5.8 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.6	83.2
OPER	172.1	-126.0	138.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.31	3.02	-17.93	2.32	-19.35	4.64	-14.88	3.57
OPER	HS20	-23.31	3.02	-17.93	2.32	-19.35	4.64	-14.88	3.57
OPER	2F1	-14.43	2.84	-11.10	2.19	0.00	0.00	0.00	0.00
OPER	3F1	-19.48	3.08	-14.99	2.37	0.00	0.00	0.00	0.00
OPER	4F1	-19.93	2.26	-15.33	1.74	0.00	0.00	0.00	0.00
OPER	5C1	-18.58	4.29	-14.29	3.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.24	17.95	HS 64.87	116.8
HS20	5.41	29.92	HS 108.12	194.6
2F1	8.73	48.81	0.00	131.0
3F1	6.47	44.99	0.00	148.7
4F1	6.32	61.33	0.00	170.7
5C1	6.78	32.31	0.00	271.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.9	206.4	-192.3	206.4	-192.3	188.8	-209.9	188.8	-
OPER 349.8	332.2	-332.2	332.2	-332.2	314.6	-349.8	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50	
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00
OPER	HS20	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50	
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00
OPER	2F1	63.30 L	48.69	7.50	0.0	0.00	0.00	0.00	
		-28.54 R	-21.95	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.80 L	62.93	3.50	0.0	0.00	0.00	0.00	
		-41.05 R	-31.58	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.88 L	64.52	3.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.06 R	62.36	64.50	0.0	0.00	0.00	0.00	
		-38.79 R	-29.84	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.90	4.79	1.90	4.79	HS 37.93	68.3
HS20	3.16	7.99	3.16	7.99	HS 63.22	113.8
2F1	4.97	12.26	4.97	12.26	0.00	74.6
3F1	3.85	8.52	3.85	8.52	0.00	88.5
4F1	3.75	7.87	3.75	7.87	0.00	101.3

5C1	3.88	9.02	3.88	9.02	0.00	155.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.2
OPER	359.7C	-319.4	319.4	-359.7C	360.7	-318.4	320.4	-358.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	85.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00		
OPER	HS20	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	85.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00		
OPER	2F1	41.11 L	31.62	10.00	0.0	0.00	0.00	0.00	0.00	
		-32.61 R	-25.09	42.50	0.0	0.00	0.00	0.00		
OPER	3F1	50.94 L	39.18	6.00	0.0	0.00	0.00	0.00	0.00	
		-46.92 R	-36.09	45.00	0.0	0.00	0.00	0.00		
OPER	4F1	47.57 L	36.59	2.00	0.0	0.00	0.00	0.00	0.00	
		-50.81 R	-39.09	48.00	0.0	0.00	0.00	0.00		
OPER	5C1	58.56 R	45.05	67.00	0.0	0.00	0.00	0.00	0.00	
		-44.33 R	-34.10	47.00	0.0	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.38	3.82	3.01	4.30	HS 60.11	108.2
HS20	5.64	6.36	5.01	7.17	HS 100.18	180.3
2F1	8.77	9.76	7.79	11.00	0.00	116.9
3F1	7.08	6.79	6.29	7.64	0.00	144.7
4F1	7.58	6.27	6.74	7.06	0.00	169.2
5C1	6.16	7.18	5.47	8.09	0.00	218.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

1.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.7 -7.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.3	84.5
OPER	172.1	-123.9	140.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.22	0.97	-21.70	0.75	-21.94	2.83	-16.88	2.18
OPER	HS20	-28.22	0.97	-21.70	0.75	-21.94	2.83	-16.88	2.18
OPER	2F1	-16.52	1.41	-12.71	1.08	0.00	0.00	0.00	0.00
OPER	3F1	-22.86	1.17	-17.59	0.90	0.00	0.00	0.00	0.00
OPER	4F1	-23.48	0.68	-18.06	0.52	0.00	0.00	0.00	0.00
OPER	5C1	-21.70	2.52	-16.69	1.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.63	29.87	HS 52.69	94.8
HS20	4.39	49.79	HS 87.82	158.1
2F1	7.50	100.16	0.00	112.5
3F1	5.42	120.64	0.00	124.6
4F1	5.28	207.65	0.00	142.5
5C1	5.71	55.95	0.00	228.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.7	198.9	-199.7	198.9	-199.7	199.9	-198.7	199.9	-
OPER 331.2	332.2	-332.2	332.2	-332.2	333.2	-331.2	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00	85.00
OPER	HS20	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00	85.00
OPER	2F1	41.11 L	31.62	10.00	0.0	0.00	0.00	0.00	
		-32.61 R	-25.09	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	50.94 L	39.18	6.00	0.0	0.00	0.00	0.00	
		-46.92 R	-36.09	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.57 L	36.59	2.00	0.0	0.00	0.00	0.00	
		-50.81 R	-39.09	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.56 R	45.05	67.00	0.0	0.00	0.00	0.00	
		-44.33 R	-34.10	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.12	3.97	3.12	3.97	HS 62.51	112.5
HS20	5.21	6.62	5.21	6.62	HS 104.18	187.5
2F1	8.10	10.16	8.10	10.16	0.00	121.6
3F1	6.54	7.06	6.54	7.06	0.00	150.4
4F1	7.00	6.52	7.00	6.52	0.00	176.0

5C1

5.69

7.47

5.69

7.47

0.00

227.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.0 -22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	230.7	-176.8	206.5	-200.9
OPER	359.7C	-319.4	319.4	-359.7C	384.5	-294.6	344.2	-334.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50			
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00		
OPER	HS20	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50			
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00		
OPER	2F1	13.37 L	10.28	12.50	0.0	0.00	0.00	0.00			
		-36.69 R	-28.22	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.14 R	10.88	70.00	0.0	0.00	0.00	0.00			
		-52.78 R	-40.60	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.10 R	11.61	74.00	0.0	0.00	0.00	0.00			
		-57.17 R	-43.97	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.41 R	22.62	69.50	0.0	0.00	0.00	0.00			
		-52.01 L	-40.01	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.77	2.85	8.75	3.24	HS 57.01	102.6
HS20	16.28	4.75	14.58	5.40	HS 95.01	171.0
2F1	28.76	8.03	25.75	9.13	0.00	120.5
3F1	27.18	5.58	24.34	6.34	0.00	128.4
4F1	25.46	5.15	22.80	5.86	0.00	139.2
5C1	13.07	5.66	11.70	6.44	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

1.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.9 -9.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-73.1	85.8
OPER	172.1	-121.8	142.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.71	0.64	-25.16	0.49	-24.40	1.34	-18.77	1.03
OPER	HS20	-32.71	0.64	-25.16	0.49	-24.40	1.34	-18.77	1.03
OPER	2F1	-18.39	0.44	-14.15	0.34	0.00	0.00	0.00	0.00
OPER	3F1	-25.94	0.63	-19.96	0.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.32	0.68	-21.02	0.52	0.00	0.00	0.00	0.00
OPER	5C1	-24.64	1.00	-18.95	0.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.23	63.91	HS 44.69	80.4
HS20	3.72	106.52	HS 74.48	134.1
2F1	6.62	327.15	0.00	99.3
3F1	4.70	227.40	0.00	108.0
4F1	4.46	210.74	0.00	120.4
5C1	4.94	143.15	0.00	197.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 1.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.0 -22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.5	189.4	-209.2	189.4	-209.2	214.2	-184.5	214.2	-
OPER 307.4	332.2	-332.2	332.2	-332.2	357.0	-307.4	357.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50	
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00
OPER	HS20	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50	
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00
OPER	2F1	13.37 L	10.28	12.50	0.0	0.00	0.00	0.00	
		-36.69 R	-28.22	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.14 R	10.88	70.00	0.0	0.00	0.00	0.00	
		-52.78 R	-40.60	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.10 R	11.61	74.00	0.0	0.00	0.00	0.00	
		-57.17 R	-43.97	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.41 R	22.62	69.50	0.0	0.00	0.00	0.00	
		-52.01 L	-40.01	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.07	2.97	9.07	2.97	HS 59.48	107.1
HS20	15.12	4.96	15.12	4.96	HS 99.13	178.4
2F1	26.70	8.38	26.70	8.38	0.00	125.7
3F1	25.24	5.82	25.24	5.82	0.00	134.0
4F1	23.64	5.38	23.64	5.38	0.00	145.2

5C1 12.14 5.91 12.14 5.91 0.00 236.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	212.7	-128.9	193.5	-148.1
OPER	300.6C	-268.7	268.7	-300.6C	354.5	-214.8	322.5	-246.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00		
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00	
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00		
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00	
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00		
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00		
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00		
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00		
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.69	1.24	11.54	1.42	HS 24.80	44.6
HS20	21.15	2.07	19.24	2.37	HS 41.33	74.4
2F1	32.45	4.79	29.52	5.50	0.00	71.8
3F1	22.56	3.20	20.52	3.67	0.00	73.5
4F1	20.83	2.65	18.95	3.05	0.00	71.6
5C1	27.24	2.92	24.78	3.35	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-9.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-71.8	63.3
OPER	151.3	-119.7	105.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.71	34.96	-25.16	26.89	-24.40	26.43	-18.77	20.33
OPER	HS20	-32.71	34.96	-25.16	26.89	-24.40	26.43	-18.77	20.33
OPER	2F1	-18.39	19.64	-14.15	15.11	0.00	0.00	0.00	0.00
OPER	3F1	-25.94	27.65	-19.96	21.27	0.00	0.00	0.00	0.00
OPER	4F1	-27.32	29.22	-21.02	22.48	0.00	0.00	0.00	0.00
OPER	5C1	-24.64	26.83	-18.95	20.64	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.96	1.81	HS 36.20	65.2
HS20	3.26	3.02	HS 60.33	108.6
2F1	5.98	5.37	0.00	80.5
3F1	4.18	3.81	0.00	87.7
4F1	3.89	3.61	0.00	97.4
5C1	4.38	3.93	0.00	157.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00	
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00	
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00	
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00	
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.93	1.30	11.93	1.30	HS 26.04	46.9
HS20	19.88	2.17	19.88	2.17	HS 43.40	78.1
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.699	999999.000	85.315

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	212.7	-128.9	193.5	-148.1
OPER	300.6C	-268.7	268.7	-300.6C	354.5	-214.8	322.5	-246.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00		
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00	
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00		
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00	
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00		
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00		
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00		
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00		
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.69	1.24	11.54	1.42	HS 24.80	44.6
HS20	21.15	2.07	19.24	2.37	HS 41.33	74.4
2F1	32.45	4.79	29.52	5.50	0.00	71.8
3F1	22.56	3.20	20.52	3.67	0.00	73.5
4F1	20.83	2.65	18.95	3.05	0.00	71.6
5C1	27.24	2.92	24.78	3.35	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-11.6	10.1

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-71.8	63.3
OPER	151.3	-119.7	105.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.72	34.96	-28.25	26.89	-26.68	26.43	-20.52	20.33
OPER	HS20	-36.72	34.96	-28.25	26.89	-26.68	26.43	-20.52	20.33
OPER	2F1	-20.02	19.64	-15.40	15.11	0.00	0.00	0.00	0.00
OPER	3F1	-28.68	27.65	-22.06	21.27	0.00	0.00	0.00	0.00
OPER	4F1	-30.81	29.22	-23.70	22.48	0.00	0.00	0.00	0.00
OPER	5C1	-27.33	26.83	-21.02	20.64	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.96	1.81	HS 36.20	65.2
HS20	3.26	3.02	HS 60.33	108.6
2F1	5.98	5.37	0.00	80.5
3F1	4.18	3.81	0.00	87.7
4F1	3.89	3.61	0.00	97.4
5C1	4.38	3.93	0.00	157.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-4.5 -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00	
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00	
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00	
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00	
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.93	1.30	11.93	1.30	HS 26.04	46.9
HS20	19.88	2.17	19.88	2.17	HS 43.40	78.1
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.6 -26.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	197.8	-143.7	178.6	-162.9
OPER	300.6C	-268.7	268.7	-300.6C	329.7	-239.6	297.7	-271.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50			
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50		
OPER	HS20	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50			
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50		
OPER	2F1	12.95 R	9.96	37.50	0.0	0.00	0.00	0.00			
		-39.20 L	-30.15	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	9.59 R	7.38	41.50	0.0	0.00	0.00	0.00			
		-56.39 L	-43.37	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	8.95 R	6.89	74.00	0.0	0.00	0.00	0.00			
		-60.96 L	-46.89	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	21.51 R	16.55	78.50	0.0	0.00	0.00	0.00			
		-55.01 L	-42.32	-3.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.20	2.12	8.31	2.40	HS 42.32	76.2
HS20	15.34	3.53	13.85	4.00	HS 70.53	127.0
2F1	25.47	6.11	23.00	6.93	0.00	91.7
3F1	34.37	4.25	31.04	4.82	0.00	97.7
4F1	36.82	3.93	33.25	4.45	0.00	106.1
5C1	15.33	4.36	13.84	4.94	0.00	174.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-75.1	64.5
OPER	151.3	-125.2	107.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	2F1	-2.04	17.51	-1.57	13.47	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.31	-2.25	18.70	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.22	-2.43	19.40	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	23.53	-2.43	18.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.09	2.13	HS 42.63	76.7
HS20	41.81	3.55	HS 71.06	127.9
2F1	61.47	6.14	0.00	92.1
3F1	42.73	4.42	0.00	101.7
4F1	39.60	4.26	0.00	115.1
5C1	39.59	4.57	0.00	182.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-26.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 150.2	156.0	-179.3	156.0	-179.3	185.1	-150.2	185.1	-
OPER 250.3	279.4	-279.4	279.4	-279.4	308.5	-250.3	308.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50	
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50
OPER	HS20	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50	
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50
OPER	2F1	12.95 R	9.96	37.50	0.0	0.00	0.00	0.00	
		-39.20 L	-30.15	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	9.59 R	7.38	41.50	0.0	0.00	0.00	0.00	
		-56.39 L	-43.37	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	8.95 R	6.89	74.00	0.0	0.00	0.00	0.00	
		-60.96 L	-46.89	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.51 R	16.55	78.50	0.0	0.00	0.00	0.00	
		-55.01 L	-42.32	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.61	2.21	8.61	2.21	HS 44.22	79.6
HS20	14.35	3.68	14.35	3.68	HS 73.70	132.7
2F1	23.83	6.39	23.83	6.39	0.00	95.8
3F1	32.16	4.44	32.16	4.44	0.00	102.1
4F1	34.45	4.11	34.45	4.11	0.00	110.9

5C1	14.34	4.55	14.34	4.55	0.00	182.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	186.1	-155.5	166.9	-174.7
OPER	300.6C	-268.7	268.7	-300.6C	310.2	-259.1	278.2	-291.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00			
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50		
OPER	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00			
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50		
OPER	2F1	37.81 R	29.08	40.00	0.0	0.00	0.00	0.00			
		-33.51 L	-25.78	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	45.95 R	35.35	44.00	0.0	0.00	0.00	0.00			
		-48.20 L	-37.08	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.32 R	32.55	44.00	0.0	0.00	0.00	0.00			
		-52.10 L	-40.08	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.42 R	35.71	81.00	0.0	0.00	0.00	0.00			
		-44.83 L	-34.49	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.18	2.79	2.85	3.14	HS 55.86	100.6
HS20	5.30	4.66	4.76	5.23	HS 93.10	167.6
2F1	8.20	7.73	7.36	8.69	0.00	110.4
3F1	6.75	5.38	6.05	6.04	0.00	123.7
4F1	7.33	4.97	6.57	5.59	0.00	134.3
5C1	6.68	5.78	5.99	6.49	0.00	231.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.52	-2.30	19.63	-4.19	21.08	-3.22	16.22
OPER	HS20	-2.99	25.52	-2.30	19.63	-4.19	21.08	-3.22	16.22
OPER	2F1	-2.04	15.29	-1.57	11.76	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.82	-2.25	16.02	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.40	-2.43	16.46	0.00	0.00	0.00	0.00
OPER	5C1	-4.74	20.12	-3.65	15.48	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.63	2.58	HS 51.52	92.7
HS20	29.38	4.29	HS 85.87	154.6
2F1	60.46	7.17	0.00	107.5
3F1	42.02	5.26	0.00	121.0
4F1	38.94	5.12	0.00	138.3
5C1	25.99	5.45	0.00	217.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.0 -8.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 161.9	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
OPER 269.9	279.4	-279.4	279.4	-279.4	288.9	-269.9	288.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00	
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50
OPER	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00	
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50
OPER	2F1	37.81 R	29.08	40.00	0.0	0.00	0.00	0.00	
		-33.51 L	-25.78	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.95 R	35.35	44.00	0.0	0.00	0.00	0.00	
		-48.20 L	-37.08	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.32 R	32.55	44.00	0.0	0.00	0.00	0.00	
		-52.10 L	-40.08	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.42 R	35.71	81.00	0.0	0.00	0.00	0.00	
		-44.83 L	-34.49	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.96	2.91	2.96	2.91	HS 58.18	104.7
HS20	4.94	4.85	4.94	4.85	HS 96.96	174.5
2F1	7.64	8.05	7.64	8.05	0.00	114.6
3F1	6.29	5.60	6.29	5.60	0.00	128.8
4F1	6.83	5.18	6.83	5.18	0.00	139.8

5C1	6.22	6.02	6.22	6.02	0.00	240.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50		
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00	
OPER	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50		
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00	
OPER	2F1	55.98 R	43.07	42.50	0.0	0.00	0.00	0.00		
		-27.82 L	-21.40	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	71.07 R	54.67	46.50	0.0	0.00	0.00	0.00		
		-40.01 L	-30.78	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	72.96 R	56.13	46.50	0.0	0.00	0.00	0.00		
		-43.25 L	-33.27	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	66.81 R	51.39	48.50	0.0	0.00	0.00	0.00		
		-39.84 L	-30.64	4.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.07	3.55	1.85	3.97	HS 36.92	66.5
HS20	3.45	5.92	3.08	6.61	HS 61.54	110.8
2F1	5.28	9.83	4.71	10.98	0.00	70.7
3F1	4.16	6.84	3.71	7.64	0.00	85.4
4F1	4.05	6.32	3.62	7.06	0.00	97.6
5C1	4.43	6.87	3.95	7.67	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

2.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.7	67.0
OPER	151.3	-121.1	111.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.35	20.66	-3.35	15.90	-6.46	18.14	-4.97	13.95
OPER	HS20	-4.35	20.66	-3.35	15.90	-6.46	18.14	-4.97	13.95
OPER	2F1	-3.57	12.90	-2.75	9.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.84	17.18	-2.95	13.21	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.57	-2.43	13.51	0.00	0.00	0.00	0.00
OPER	5C1	-6.58	16.82	-5.06	12.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.25	3.24	HS 64.84	116.7
HS20	18.75	5.40	HS 108.06	194.5
2F1	33.88	8.65	0.00	129.8
3F1	31.57	6.50	0.00	149.5
4F1	38.29	6.36	0.00	171.6
5C1	18.41	6.64	0.00	265.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.6	169.6	-165.7	169.6	-165.7	164.7	-170.6	164.7	-
OPER 284.3	279.4	-279.4	279.4	-279.4	274.5	-284.3	274.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50	
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00
OPER	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50	
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00
OPER	2F1	55.98 R	43.07	42.50	0.0	0.00	0.00	0.00	
		-27.82 L	-21.40	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.07 R	54.67	46.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.78	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.96 R	56.13	46.50	0.0	0.00	0.00	0.00	
		-43.25 L	-33.27	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.81 R	51.39	48.50	0.0	0.00	0.00	0.00	
		-39.84 L	-30.64	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.92	3.69	1.92	3.69	HS 38.43	69.2
HS20	3.20	6.15	3.20	6.15	HS 64.04	115.3
2F1	4.90	10.22	4.90	10.22	0.00	73.6
3F1	3.86	7.11	3.86	7.11	0.00	88.8
4F1	3.76	6.57	3.76	6.57	0.00	101.6

5C1	4.11	7.14	4.11	7.14	0.00	164.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.8	13.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.9	-169.6	152.7	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.5	-282.7	254.6	-314.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	2F1	65.95 R	50.73	45.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	-22.12 L	-17.02	7.50	0.0	0.00	0.00	0.00	0.00
		84.33 R	64.87	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	-31.82 L	-24.48	5.00	0.0	0.00	0.00	0.00	0.00
		90.47 R	69.60	49.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	-34.40 L	-26.46	2.00	0.0	0.00	0.00	0.00	0.00
		81.03 R	62.33	47.00	0.0	0.00	0.00	0.00	0.00
		-36.33 L	-27.95	5.50	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.78	4.62	1.58	5.14	HS 31.66	57.0
HS20	2.97	7.69	2.64	8.56	HS 52.76	95.0
2F1	4.34	12.78	3.86	14.23	0.00	57.9
3F1	3.40	8.89	3.02	9.89	0.00	69.4
4F1	3.17	8.22	2.81	9.15	0.00	76.0
5C1	3.54	7.78	3.14	8.66	0.00	125.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.4	68.2
OPER	151.3	-119.0	113.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.94	11.65
OPER	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.94	11.65
OPER	2F1	-5.65	10.44	-4.35	8.03	0.00	0.00	0.00	0.00
OPER	3F1	-6.72	13.54	-5.17	10.42	0.00	0.00	0.00	0.00
OPER	4F1	-5.68	13.53	-4.37	10.41	0.00	0.00	0.00	0.00
OPER	5C1	-8.66	14.27	-6.66	10.98	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.91	4.02	HS 80.32	144.6
HS20	13.19	6.69	HS 133.87	241.0
2F1	21.07	10.89	0.00	163.4
3F1	17.71	8.40	0.00	193.2
4F1	20.94	8.40	0.00	226.9
5C1	13.74	7.97	0.00	318.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.400 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.1	173.3	-162.0	173.3	-162.0	159.2	-176.1	159.2	-
OPER 293.5	279.4	-279.4	279.4	-279.4	265.3	-293.5	265.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	2F1	65.95 R	50.73	45.00	0.0	0.00	0.00	0.00	
		-22.12 L	-17.02	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.33 R	64.87	45.00	0.0	0.00	0.00	0.00	
		-31.82 L	-24.48	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.47 R	69.60	49.00	0.0	0.00	0.00	0.00	
		-34.40 L	-26.46	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.03 R	62.33	47.00	0.0	0.00	0.00	0.00	
		-36.33 L	-27.95	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.65	4.79	1.65	4.79	HS 32.99	59.4
HS20	2.75	7.99	2.75	7.99	HS 54.99	99.0
2F1	4.02	13.27	4.02	13.27	0.00	60.3
3F1	3.15	9.22	3.15	9.22	0.00	72.4
4F1	2.93	8.53	2.93	8.53	0.00	79.2

5C1	3.27	8.08	3.27	8.08	0.00	131.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 17.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50			
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00		
OPER	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50			
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00		
OPER	2F1	67.18 R	51.67	47.50	0.0	0.00	0.00	0.00			
		-16.43 L	-12.64	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.77 L	69.05	27.50	0.0	0.00	0.00	0.00			
		-23.64 L	-18.18	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.76 R	72.12	51.50	0.0	0.00	0.00	0.00			
		-25.55 L	-19.65	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.67 R	65.90	88.50	0.0	0.00	0.00	0.00			
		-34.40 L	-26.46	6.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.80	6.30	1.59	7.01	HS 31.86	57.3
HS20	2.99	10.51	2.65	11.68	HS 53.10	95.6
2F1	4.20	17.45	3.73	19.40	0.00	55.9
3F1	3.15	12.13	2.79	13.49	0.00	64.2
4F1	3.01	11.22	2.67	12.48	0.00	72.1
5C1	3.30	8.34	2.92	9.27	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

2.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1

0.0

0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.3	-117.0	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.08	13.29	-10.06	10.22	-11.82	12.21	-9.09	9.39
OPER	HS20	-13.08	13.29	-10.06	10.22	-11.82	12.21	-9.09	9.39
OPER	2F1	-7.94	8.01	-6.11	6.16	0.00	0.00	0.00	0.00
OPER	3F1	-9.95	10.05	-7.65	7.73	0.00	0.00	0.00	0.00
OPER	4F1	-9.28	9.40	-7.14	7.23	0.00	0.00	0.00	0.00
OPER	5C1	-10.93	11.66	-8.41	8.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.36	5.23	HS 104.54	188.2
HS20	8.94	8.71	HS 174.24	313.6
2F1	14.73	14.45	0.00	216.8
3F1	11.75	11.52	0.00	265.0
4F1	12.61	12.32	0.00	332.7
5C1	10.70	9.93	0.00	397.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 17.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50	
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00
OPER	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50	
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00
OPER	2F1	67.18 R	51.67	47.50	0.0	0.00	0.00	0.00	
		-16.43 L	-12.64	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.77 L	69.05	27.50	0.0	0.00	0.00	0.00	
		-23.64 L	-18.18	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.76 R	72.12	51.50	0.0	0.00	0.00	0.00	
		-25.55 L	-19.65	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.67 R	65.90	88.50	0.0	0.00	0.00	0.00	
		-34.40 L	-26.46	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.66	6.54	1.66	6.54	HS 33.23	59.8
HS20	2.77	10.90	2.77	10.90	HS 55.38	99.7
2F1	3.89	18.11	3.89	18.11	0.00	58.3
3F1	2.91	12.59	2.91	12.59	0.00	66.9
4F1	2.79	11.65	2.79	11.65	0.00	75.2

5C1 3.05 8.65 3.05 8.65 0.00 122.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.3	-171.3	151.1	-190.5
OPER	300.6C	-268.7	268.7	-300.6C	283.8	-285.5	251.8	-317.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00			
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00		
OPER	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00			
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00		
OPER	2F1	66.15 L	50.88	30.00	0.0	0.00	0.00	0.00			
		-19.63 R	-15.10	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.67 L	65.13	30.00	0.0	0.00	0.00	0.00			
		-28.25 R	-21.73	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.83 L	69.87	26.00	0.0	0.00	0.00	0.00			
		-30.59 R	-23.53	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.76 L	64.43	28.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.77	5.69	1.57	6.32	HS 31.38	56.5
HS20	2.95	9.48	2.62	10.54	HS 52.29	94.1
2F1	4.29	14.54	3.81	16.17	0.00	57.1
3F1	3.35	10.11	2.97	11.24	0.00	68.4
4F1	3.12	9.33	2.77	10.38	0.00	74.8
5C1	3.39	8.37	3.01	9.31	0.00	120.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-68.9 70.8
OPER	151.3	-114.8 117.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.		w/imp.	w/o imp.			
		(-) (+)	(-) (+)		(-) (+)	(-) (+)			
INV.	HS20	-16.75 9.12	-12.88 7.02		-14.76 9.40	-11.35 7.23			
OPER	HS20	-16.75 9.12	-12.88 7.02		-14.76 9.40	-11.35 7.23			
OPER	2F1	-10.36 5.71	-7.97 4.39		0.00 0.00	0.00 0.00			
OPER	3F1	-13.43 6.82	-10.33 5.25		0.00 0.00	0.00 0.00			
OPER	4F1	-13.41 5.83	-10.32 4.49		0.00 0.00	0.00 0.00			
OPER	5C1	-13.40 9.45	-10.31 7.27		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	4.11	7.52	HS 82.27	148.1
HS20	6.86	12.54	HS 137.11	246.8
2F1	11.08	20.66	0.00	166.2
3F1	8.55	17.29	0.00	196.6
4F1	8.56	20.21	0.00	231.2
5C1	8.57	12.48	0.00	342.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.8	174.4	-160.9	174.4	-160.9	157.5	-177.8	157.5	-
OPER 296.3	279.4	-279.4	279.4	-279.4	262.5	-296.3	262.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00	
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00
OPER	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00	
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00
OPER	2F1	66.15 L	50.88	30.00	0.0	0.00	0.00	0.00	
		-19.63 R	-15.10	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.67 L	65.13	30.00	0.0	0.00	0.00	0.00	
		-28.25 R	-21.73	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.83 L	69.87	26.00	0.0	0.00	0.00	0.00	
		-30.59 R	-23.53	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.76 L	64.43	28.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.64	5.90	1.64	5.90	HS 32.72	58.9
HS20	2.73	9.83	2.73	9.83	HS 54.53	98.1
2F1	3.97	15.09	3.97	15.09	0.00	59.5
3F1	3.10	10.49	3.10	10.49	0.00	71.3
4F1	2.89	9.68	2.89	9.68	0.00	78.0

5C1

3.13

8.68

3.13

8.68

0.00

125.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.7	9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.4	154.9	-186.6
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	2F1	56.41 L	43.39	32.50	0.0	0.00	0.00	0.00	0.00
		-24.73 R	-19.02	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.67 L	55.13	28.50	0.0	0.00	0.00	0.00	0.00
		-35.57 R	-27.36	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.62 L	56.63	28.50	0.0	0.00	0.00	0.00	0.00
		-38.53 R	-29.64	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.30 R	55.62	89.50	0.0	0.00	0.00	0.00	0.00
		-36.39 R	-28.00	71.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.02	4.41	1.80	4.92	HS 35.96	64.7
HS20	3.37	7.36	3.00	8.20	HS 59.94	107.9
2F1	5.14	11.29	4.58	12.58	0.00	68.7
3F1	4.05	7.84	3.60	8.74	0.00	82.9
4F1	3.94	7.24	3.51	8.07	0.00	94.7
5C1	4.01	7.67	3.57	8.55	0.00	142.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

2.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	120.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.51	4.55	-15.77	3.50	-17.75	6.82	-13.66	5.25
OPER	HS20	-20.51	4.55	-15.77	3.50	-17.75	6.82	-13.66	5.25
OPER	2F1	-12.82	3.63	-9.86	2.79	0.00	0.00	0.00	0.00
OPER	3F1	-17.07	3.95	-13.13	3.04	0.00	0.00	0.00	0.00
OPER	4F1	-17.45	3.53	-13.42	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-16.45	7.30	-12.66	5.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.30	10.55	HS 65.98	118.8
HS20	5.50	17.59	HS 109.97	197.9
2F1	8.79	33.09	0.00	131.9
3F1	6.61	30.40	0.00	152.0
4F1	6.46	34.01	0.00	174.5
5C1	6.85	16.45	0.00	274.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.8	279.4	-279.4	279.4	-279.4	269.0	-289.8	269.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	2F1	56.41 L	43.39	32.50	0.0	0.00	0.00	0.00	
		-24.73 R	-19.02	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.67 L	55.13	28.50	0.0	0.00	0.00	0.00	
		-35.57 R	-27.36	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.62 L	56.63	28.50	0.0	0.00	0.00	0.00	
		-38.53 R	-29.64	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.30 R	55.62	89.50	0.0	0.00	0.00	0.00	
		-36.39 R	-28.00	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.58	1.87	4.58	HS 37.46	67.4
HS20	3.12	7.64	3.12	7.64	HS 62.43	112.4
2F1	4.77	11.72	4.77	11.72	0.00	71.5
3F1	3.75	8.15	3.75	8.15	0.00	86.3
4F1	3.65	7.52	3.65	7.52	0.00	98.6

5C1	3.72	7.96	3.72	7.96	0.00	148.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00			
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00		
OPER	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00			
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00		
OPER	2F1	38.40 L	29.53	35.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.84 L	36.03	31.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.14 L	33.19	31.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.41 R	41.85	92.00	0.0	0.00	0.00	0.00			
		-40.26 R	-30.97	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.46	98.0
HS20	5.08	5.84	4.54	6.54	HS 90.77	163.4
2F1	7.86	8.97	7.03	10.04	0.00	105.4
3F1	6.45	6.23	5.76	6.98	0.00	132.5
4F1	7.00	5.76	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.4	-5.3	0.0
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Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-66.4 73.2
OPER	151.3	-110.7 122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.		w/imp.	w/o imp.			
		(-) (+)	(-) (+)		(-) (+)	(-) (+)			
INV.	HS20	-25.34 3.64	-19.49 2.80		-20.71 4.54	-15.93 3.49			
OPER	HS20	-25.34 3.64	-19.49 2.80		-20.71 4.54	-15.93 3.49			
OPER	2F1	-15.22 2.28	-11.71 1.75		0.00 0.00	0.00 0.00			
OPER	3F1	-20.71 3.28	-15.93 2.52		0.00 0.00	0.00 0.00			
OPER	4F1	-21.27 3.53	-16.36 2.71		0.00 0.00	0.00 0.00			
OPER	5C1	-19.65 5.28	-15.12 4.06		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.62	16.14	HS 52.43	94.4
HS20	4.37	26.90	HS 87.38	157.3
2F1	7.27	53.61	0.00	109.1
3F1	5.34	37.27	0.00	122.9
4F1	5.20	34.60	0.00	140.5
5C1	5.63	23.13	0.00	225.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00
OPER	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00
OPER	2F1	38.40 L	29.53	35.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.84 L	36.03	31.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.14 L	33.19	31.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.41 R	41.85	92.00	0.0	0.00	0.00	0.00	
		-40.26 R	-30.97	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.63	101.9
HS20	4.72	6.08	4.72	6.08	HS 94.38	169.9
2F1	7.31	9.33	7.31	9.33	0.00	109.6
3F1	5.99	6.48	5.99	6.48	0.00	137.8
4F1	6.50	5.99	6.50	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50			
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50		
OPER	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50			
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50		
OPER	2F1	13.55 L	10.42	37.50	0.0	0.00	0.00	0.00			
		-34.91 R	-26.86	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.46 R	10.35	95.00	0.0	0.00	0.00	0.00			
		-50.23 R	-38.64	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.37 R	11.05	99.00	0.0	0.00	0.00	0.00			
		-54.40 R	-41.84	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.23 R	21.71	94.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.97	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.51	2.55	6.76	2.87	HS 50.98	91.8
HS20	12.52	4.25	11.26	4.79	HS 84.96	152.9
2F1	23.52	7.18	21.16	8.10	0.00	107.7
3F1	23.68	4.99	21.30	5.63	0.00	114.8
4F1	22.18	4.61	19.95	5.20	0.00	124.4
5C1	11.29	5.36	10.16	6.04	0.00	214.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

2.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6

-7.2

0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-65.2	74.5
OPER	151.3	-108.6	124.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	3.78	-23.12	2.91	-23.53	3.50	-18.10	2.69
OPER	HS20	-30.06	3.78	-23.12	2.91	-23.53	3.50	-18.10	2.69
OPER	2F1	-17.46	2.28	-13.43	1.75	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	3.28	-18.63	2.52	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	3.54	-19.31	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	3.50	-17.59	2.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.17	19.69	HS 43.36	78.1
HS20	3.61	32.82	HS 72.27	130.1
2F1	6.22	54.52	0.00	93.3
3F1	4.48	37.90	0.00	103.1
4F1	4.33	35.06	0.00	116.8
5C1	4.75	35.46	0.00	190.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 2.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.8	160.4	-174.8	160.4	-174.8	178.4	-156.8	178.4	-
OPER 261.4	279.4	-279.4	279.4	-279.4	297.4	-261.4	297.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50	
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50
OPER	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50	
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50
OPER	2F1	13.55 L	10.42	37.50	0.0	0.00	0.00	0.00	
		-34.91 R	-26.86	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.46 R	10.35	95.00	0.0	0.00	0.00	0.00	
		-50.23 R	-38.64	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.37 R	11.05	99.00	0.0	0.00	0.00	0.00	
		-54.40 R	-41.84	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.23 R	21.71	94.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.97	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.01	2.66	7.01	2.66	HS 53.16	95.7
HS20	11.68	4.43	11.68	4.43	HS 88.61	159.5
2F1	21.96	7.49	21.96	7.49	0.00	112.3
3F1	22.10	5.20	22.10	5.20	0.00	119.7
4F1	20.70	4.80	20.70	4.80	0.00	129.7

5C1	10.54	5.59	10.54	5.59	0.00	223.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00		40.00	
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00		40.00	
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00		0.00	
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00		0.00	
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00		0.00	
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00		0.00	
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-7.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.9	63.7
OPER	151.3	-106.6	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.28	-18.10	20.22
OPER	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.28	-18.10	20.22
OPER	2F1	-17.46	19.45	-13.43	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	27.47	-18.63	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	29.05	-19.31	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	25.91	-17.59	19.93	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.09	3.07	HS 61.49	110.7
2F1	5.48	5.46	0.00	81.9
3F1	3.88	3.86	0.00	88.9
4F1	3.67	3.65	0.00	98.7
5C1	4.11	4.10	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00	
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00	
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00	
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00			
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00			
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00			
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00			
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-9.1	9.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.9	63.7
OPER	151.3	-106.6	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.48	34.53	-26.52	26.56	-26.11	26.28	-20.08	20.22
OPER	HS20	-34.48	34.53	-26.52	26.56	-26.11	26.28	-20.08	20.22
OPER	2F1	-19.43	19.45	-14.95	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.44	27.47	-21.11	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.01	29.05	-22.31	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-25.93	25.91	-19.95	19.93	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.09	3.07	HS 61.49	110.7
2F1	5.48	5.46	0.00	81.9
3F1	3.88	3.86	0.00	88.9
4F1	3.67	3.65	0.00	98.7
5C1	4.11	4.10	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00	
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00	
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00	
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50			
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00		62.50	
OPER	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50			
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00		62.50	
OPER	2F1	13.45 R	10.34	62.50	0.0	0.00	0.00	0.00		0.00	
		-34.72 L	-26.71	32.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	15.11 L	11.62	5.00	0.0	0.00	0.00	0.00		0.00	
		-49.95 L	-38.42	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	16.17 L	12.44	1.00	0.0	0.00	0.00	0.00		0.00	
		-54.10 L	-41.61	27.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	29.33 L	22.57	5.50	0.0	0.00	0.00	0.00		0.00	
		-46.56 L	-35.81	25.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.34	2.57	6.60	2.90	HS 51.46	92.6
HS20	12.23	4.29	11.00	4.83	HS 85.76	154.4
2F1	23.62	7.25	21.24	8.17	0.00	108.7
3F1	21.02	5.04	18.91	5.68	0.00	115.9
4F1	19.65	4.65	17.67	5.24	0.00	125.6
5C1	10.83	5.41	9.74	6.09	0.00	216.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.7	64.9
OPER	151.3	-124.5	108.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.23	23.71	-2.48	18.24
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.23	23.71	-2.48	18.24
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	24.26	-2.24	18.67	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.17	22.88	-2.43	17.60	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.15	2.16	HS 43.12	77.6
HS20	38.58	3.59	HS 71.86	129.4
2F1	61.44	6.19	0.00	92.9
3F1	42.71	4.46	0.00	102.6
4F1	39.58	4.30	0.00	116.1
5C1	39.35	4.73	0.00	189.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50	
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00	62.50
OPER	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50	
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00	62.50
OPER	2F1	13.45 R	10.34	62.50	0.0	0.00	0.00	0.00	
		-34.72 L	-26.71	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.11 L	11.62	5.00	0.0	0.00	0.00	0.00	
		-49.95 L	-38.42	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.17 L	12.44	1.00	0.0	0.00	0.00	0.00	
		-54.10 L	-41.61	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.33 L	22.57	5.50	0.0	0.00	0.00	0.00	
		-46.56 L	-35.81	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.85	2.68	6.85	2.68	HS 53.65	96.6
HS20	11.41	4.47	11.41	4.47	HS 89.42	161.0
2F1	22.04	7.56	22.04	7.56	0.00	113.4
3F1	19.62	5.25	19.62	5.25	0.00	120.8
4F1	18.33	4.85	18.33	4.85	0.00	131.0

5C1 10.10 5.64 10.10 5.64 0.00 225.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.200 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	179.9	-161.7	160.7	-180.9
OPER	300.6C	-268.7	268.7	-300.6C	299.8	-269.5	267.8	-301.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00			
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50		
OPER	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00			
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50		
OPER	2F1	38.35 R	29.50	65.00	0.0	0.00	0.00	0.00			
		-29.68 L	-22.83	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.76 R	35.97	69.00	0.0	0.00	0.00	0.00			
		-42.69 L	-32.84	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.07 R	33.13	69.00	0.0	0.00	0.00	0.00			
		-46.24 L	-35.57	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	55.19 L	42.45	8.00	0.0	0.00	0.00	0.00			
		-40.08 L	-30.83	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.03	3.57	2.71	3.99	HS 54.14	97.5
HS20	5.05	5.95	4.51	6.65	HS 90.23	162.4
2F1	7.82	9.08	6.99	10.16	0.00	104.8
3F1	6.41	6.31	5.73	7.06	0.00	131.7
4F1	6.96	5.83	6.22	6.52	0.00	157.3
5C1	5.43	6.72	4.85	7.52	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.2
OPER	151.3	-122.5	110.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.47	20.91	-3.44	16.08
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.47	20.91	-3.44	16.08
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	20.77	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.44	2.61	HS 52.10	93.8
HS20	27.40	4.34	HS 86.84	156.3
2F1	60.42	7.23	0.00	108.5
3F1	42.00	5.31	0.00	122.1
4F1	38.92	5.18	0.00	139.7
5C1	25.77	5.60	0.00	224.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.200 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.2	-168.1	167.2	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00	
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50
OPER	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00	
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50
OPER	2F1	38.35 R	29.50	65.00	0.0	0.00	0.00	0.00	
		-29.68 L	-22.83	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.76 R	35.97	69.00	0.0	0.00	0.00	0.00	
		-42.69 L	-32.84	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.07 R	33.13	69.00	0.0	0.00	0.00	0.00	
		-46.24 L	-35.57	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.19 L	42.45	8.00	0.0	0.00	0.00	0.00	
		-40.08 L	-30.83	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.82	3.71	2.82	3.71	HS 56.31	101.4
HS20	4.69	6.18	4.69	6.18	HS 93.86	168.9
2F1	7.26	9.44	7.26	9.44	0.00	109.0
3F1	5.96	6.56	5.96	6.56	0.00	137.0
4F1	6.47	6.06	6.47	6.06	0.00	163.6

5C1

5.05

6.99

5.05

6.99

0.00

201.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.0	12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	2F1	56.46 R	43.43	67.50	0.0	0.00	0.00	0.00	0.00
		-24.64 L	-18.95	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.74 R	55.18	71.50	0.0	0.00	0.00	0.00	0.00
		-35.44 L	-27.26	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.68 R	56.68	71.50	0.0	0.00	0.00	0.00	0.00
		-38.39 L	-29.53	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.92 L	56.09	10.50	0.0	0.00	0.00	0.00	0.00
		-36.19 L	-27.84	29.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.99	4.50	1.77	5.01	HS 35.43	63.8
HS20	3.32	7.50	2.95	8.35	HS 59.06	106.3
2F1	5.09	11.45	4.52	12.75	0.00	67.8
3F1	4.00	7.96	3.56	8.86	0.00	81.8
4F1	3.90	7.35	3.46	8.18	0.00	93.5
5C1	3.94	7.79	3.50	8.68	0.00	140.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.4
OPER	151.3	-120.4	112.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.74	17.96	-5.19	13.81
OPER	HS20	-4.41	20.57	-3.39	15.82	-6.74	17.96	-5.19	13.81
OPER	2F1	-3.61	12.86	-2.77	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.51	-2.42	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.71	3.28	HS 65.54	118.0
HS20	17.85	5.46	HS 109.23	196.6
2F1	33.38	8.73	0.00	131.0
3F1	30.66	6.56	0.00	150.9
4F1	38.26	6.42	0.00	173.3
5C1	18.21	6.81	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	2F1	56.46 R	43.43	67.50	0.0	0.00	0.00	0.00	
		-24.64 L	-18.95	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.74 R	55.18	71.50	0.0	0.00	0.00	0.00	
		-35.44 L	-27.26	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.68 R	56.68	71.50	0.0	0.00	0.00	0.00	
		-38.39 L	-29.53	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.92 L	56.09	10.50	0.0	0.00	0.00	0.00	
		-36.19 L	-27.84	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.85	4.67	1.85	4.67	HS 36.93	66.5
HS20	3.08	7.79	3.08	7.79	HS 61.54	110.8
2F1	4.71	11.89	4.71	11.89	0.00	70.7
3F1	3.71	8.26	3.71	8.26	0.00	85.3
4F1	3.61	7.63	3.61	7.63	0.00	97.5

5C1 3.65 8.09 3.65 8.09 0.00 145.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00			
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00		
OPER	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00			
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00		
OPER	2F1	66.30 R	51.00	70.00	0.0	0.00	0.00	0.00			
		-19.59 L	-15.07	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.87 R	65.29	70.00	0.0	0.00	0.00	0.00			
		-28.19 L	-21.68	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.05 R	70.04	74.00	0.0	0.00	0.00	0.00			
		-30.53 L	-23.49	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.00 R	64.62	72.00	0.0	0.00	0.00	0.00			
		-33.75 L	-25.96	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.73	5.81	1.53	6.45	HS 30.66	55.2
HS20	2.88	9.68	2.56	10.75	HS 51.10	92.0
2F1	4.22	14.78	3.74	16.41	0.00	56.0
3F1	3.30	10.27	2.92	11.41	0.00	67.1
4F1	3.07	9.48	2.72	10.53	0.00	73.5
5C1	3.33	8.58	2.95	9.53	0.00	118.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.90	-9.31	14.97	-7.17	11.51
OPER	HS20	-8.97	16.78	-6.90	12.90	-9.31	14.97	-7.17	11.51
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.38	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.48	-4.47	10.37	0.00	0.00	0.00	0.00
OPER	5C1	-8.70	13.45	-6.69	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.62	4.09	HS 81.85	147.3
HS20	12.70	6.82	HS 136.42	245.5
2F1	20.83	11.00	0.00	165.0
3F1	17.44	8.48	0.00	195.1
4F1	20.38	8.49	0.00	229.2
5C1	13.60	8.51	0.00	340.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.2	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
OPER 300.3	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00	
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00
OPER	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00	
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00
OPER	2F1	66.30 R	51.00	70.00	0.0	0.00	0.00	0.00	
		-19.59 L	-15.07	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.87 R	65.29	70.00	0.0	0.00	0.00	0.00	
		-28.19 L	-21.68	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.05 R	70.04	74.00	0.0	0.00	0.00	0.00	
		-30.53 L	-23.49	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.00 R	64.62	72.00	0.0	0.00	0.00	0.00	
		-33.75 L	-25.96	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	6.02	1.60	6.02	HS 31.99	57.6
HS20	2.67	10.04	2.67	10.04	HS 53.31	96.0
2F1	3.90	15.33	3.90	15.33	0.00	58.5
3F1	3.05	10.65	3.05	10.65	0.00	70.0
4F1	2.84	9.84	2.84	9.84	0.00	76.7

5C1 3.08 8.90 3.08 8.90 0.00 123.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50			
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00		
OPER	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50			
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00		
OPER	2F1	67.40 R	51.85	72.50	0.0	0.00	0.00	0.00			
		-14.62 R	-11.24	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.13 L	69.33	52.50	0.0	0.00	0.00	0.00			
		-21.03 R	-16.17	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.15 L	72.42	48.50	0.0	0.00	0.00	0.00			
		-22.77 R	-17.52	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.30 L	66.39	11.50	0.0	0.00	0.00	0.00			
		-32.71 R	-25.16	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.76	7.81	1.56	8.66	HS 31.11	56.0
HS20	2.93	13.01	2.59	14.44	HS 51.85	93.3
2F1	4.12	19.97	3.64	22.16	0.00	54.6
3F1	3.08	13.88	2.72	15.40	0.00	62.6
4F1	2.95	12.82	2.61	14.22	0.00	70.4
5C1	3.21	8.92	2.84	9.90	0.00	113.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.09	10.09	-12.11	12.03	-9.32	9.26
OPER	HS20	-13.12	13.12	-10.09	10.09	-12.11	12.03	-9.32	9.26
OPER	2F1	-7.97	7.98	-6.13	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.01	-7.69	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.95	-8.45	8.42	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.33	HS 106.32	191.4
HS20	8.86	8.88	HS 177.20	319.0
2F1	14.58	14.60	0.00	218.7
3F1	11.62	11.64	0.00	267.3
4F1	12.45	12.47	0.00	336.2
5C1	10.59	10.64	0.00	423.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50	
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00
OPER	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50	
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00
OPER	2F1	67.40 R	51.85	72.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.24	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.13 L	69.33	52.50	0.0	0.00	0.00	0.00	
		-21.03 R	-16.17	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.15 L	72.42	48.50	0.0	0.00	0.00	0.00	
		-22.77 R	-17.52	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.30 L	66.39	11.50	0.0	0.00	0.00	0.00	
		-32.71 R	-25.16	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	8.10	1.62	8.10	HS 32.47	58.5
HS20	2.71	13.49	2.71	13.49	HS 54.12	97.4
2F1	3.80	20.70	3.80	20.70	0.00	57.0
3F1	2.84	14.39	2.84	14.39	0.00	65.4
4F1	2.72	13.29	2.72	13.29	0.00	73.5

5C1	2.97	9.25	2.97	9.25	0.00	118.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.600 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.5 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00			
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00		
OPER	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00			
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00		
OPER	2F1	66.32 L	51.01	55.00	0.0	0.00	0.00	0.00			
		-19.68 R	-15.14	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.90 L	65.30	55.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.78	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.07 L	70.06	51.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.59	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.97 L	64.59	53.00	0.0	0.00	0.00	0.00			
		-33.83 R	-26.02	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.74	5.74	1.54	6.37	HS 30.74	55.3
HS20	2.89	9.56	2.56	10.62	HS 51.23	92.2
2F1	4.23	14.67	3.75	16.30	0.00	56.2
3F1	3.30	10.20	2.93	11.33	0.00	67.3
4F1	3.08	9.42	2.73	10.46	0.00	73.7
5C1	3.34	8.54	2.96	9.48	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.1	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-68.5	71.2
OPER	151.3	-114.1	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.05	9.24	-11.57	7.11
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.05	9.24	-11.57	7.11
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.48	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.68	-10.35	6.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	4.08	7.70	HS 81.63	146.9
HS20	6.80	12.84	HS 136.05	244.9
2F1	10.98	20.87	0.00	164.6
3F1	8.46	17.47	0.00	194.7
4F1	8.47	20.42	0.00	228.8
5C1	8.48	13.67	0.00	339.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.5	-179.7	155.5	-
OPER 299.6	279.4	-279.4	279.4	-279.4	259.2	-299.6	259.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00	
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00
OPER	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00	
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00
OPER	2F1	66.32 L	51.01	55.00	0.0	0.00	0.00	0.00	
		-19.68 R	-15.14	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.90 L	65.30	55.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.78	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.07 L	70.06	51.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.59	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.97 L	64.59	53.00	0.0	0.00	0.00	0.00	
		-33.83 R	-26.02	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	5.95	1.60	5.95	HS 32.07	57.7
HS20	2.67	9.92	2.67	9.92	HS 53.45	96.2
2F1	3.91	15.22	3.91	15.22	0.00	58.6
3F1	3.05	10.58	3.05	10.58	0.00	70.2
4F1	2.85	9.77	2.85	9.77	0.00	76.9

5C1 3.09 8.85 3.09 8.85 0.00 123.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.9	11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50			
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00		
OPER	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50			
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00		
OPER	2F1	56.49 L	43.45	57.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.78 L	55.22	53.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.73 L	56.72	53.50	0.0	0.00	0.00	0.00			
		-38.56 R	-29.66	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.39 R	55.68	114.50	0.0	0.00	0.00	0.00			
		-36.34 R	-27.95	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.94	HS 35.62	64.1
HS20	3.34	7.39	2.97	8.23	HS 59.37	106.9
2F1	5.11	11.34	4.54	12.63	0.00	68.2
3F1	4.02	7.88	3.58	8.78	0.00	82.2
4F1	3.91	7.28	3.48	8.11	0.00	94.0
5C1	3.99	7.72	3.55	8.60	0.00	141.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.1	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.56	4.42	-15.82	3.40	-18.03	6.66	-13.87	5.13
OPER	HS20	-20.56	4.42	-15.82	3.40	-18.03	6.66	-13.87	5.13
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.13	-13.46	2.41	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.60	-12.69	5.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.86	HS 65.39	117.7
HS20	5.45	18.11	HS 108.98	196.2
2F1	8.72	33.44	0.00	130.7
3F1	6.55	30.72	0.00	150.6
4F1	6.40	38.55	0.00	172.9
5C1	6.79	18.30	0.00	271.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50	
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00
OPER	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50	
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00
OPER	2F1	56.49 L	43.45	57.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.78 L	55.22	53.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.73 L	56.72	53.50	0.0	0.00	0.00	0.00	
		-38.56 R	-29.66	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 R	55.68	114.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.95	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.11	66.8
HS20	3.09	7.67	3.09	7.67	HS 61.85	111.3
2F1	4.74	11.77	4.74	11.77	0.00	71.0
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	97.9

5C1	3.69	8.02	3.69	8.02	0.00	147.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00			
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00		
OPER	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00			
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00		
OPER	2F1	38.39 L	29.53	60.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	92.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 L	36.02	56.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	95.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 L	33.18	56.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	98.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 R	41.85	117.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	97.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.5	-5.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.7
OPER	151.3	-110.0	122.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.39	2.94	-19.53	2.26	-20.98	4.39	-16.14	3.38
OPER	HS20	-25.39	2.94	-19.53	2.26	-20.98	4.39	-16.14	3.38
OPER	2F1	-15.25	2.02	-11.73	1.55	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.90	-15.97	2.23	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.13	-16.39	2.41	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.74	-15.15	3.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.78	HS 51.98	93.6
HS20	4.33	27.97	HS 86.63	155.9
2F1	7.21	60.88	0.00	108.2
3F1	5.30	42.31	0.00	121.9
4F1	5.16	39.21	0.00	139.4
5C1	5.58	25.90	0.00	223.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00	
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00
OPER	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00	
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00
OPER	2F1	38.39 L	29.53	60.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	56.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	56.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	117.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1	5.16	6.90	5.16	6.90	0.00	206.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50			
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50		
OPER	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50			
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50		
OPER	2F1	13.49 L	10.38	62.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 R	10.34	120.00	0.0	0.00	0.00	0.00			
		-50.19 R	-38.60	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.36 R	11.04	124.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.17 R	21.67	119.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.67	2.53	6.91	2.86	HS 50.60	91.1
HS20	12.79	4.22	11.51	4.76	HS 84.33	151.8
2F1	23.76	7.13	21.39	8.05	0.00	106.9
3F1	23.84	4.95	21.46	5.59	0.00	114.0
4F1	22.33	4.57	20.10	5.16	0.00	123.5
5C1	11.38	5.32	10.25	6.00	0.00	212.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed Shear (-)	Dead Load Shear (+)	Dead Load Shear
-0.6	-7.8		0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.9
OPER	151.3	-107.9	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.08	-23.16	2.37	-23.79	3.13	-18.30	2.41
OPER	HS20	-30.11	3.08	-23.16	2.37	-23.79	3.13	-18.30	2.41
OPER	2F1	-17.48	2.02	-13.44	1.55	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.90	-18.66	2.23	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	3.14	-19.35	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.15	-17.62	2.42	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.89	HS 43.01	77.4
HS20	3.58	39.82	HS 71.68	129.0
2F1	6.18	61.90	0.00	92.6
3F1	4.45	43.03	0.00	102.3
4F1	4.29	39.73	0.00	115.8
5C1	4.71	39.60	0.00	188.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 3.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50	
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50
OPER	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50	
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50
OPER	2F1	13.49 L	10.38	62.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	120.00	0.0	0.00	0.00	0.00	
		-50.19 R	-38.60	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 R	11.04	124.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.17 R	21.67	119.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.16	2.64	7.16	2.64	HS 52.78	95.0
HS20	11.94	4.40	11.94	4.40	HS 87.97	158.4
2F1	22.19	7.44	22.19	7.44	0.00	111.6
3F1	22.26	5.17	22.26	5.17	0.00	118.9
4F1	20.85	4.77	20.85	4.77	0.00	128.9

5C1 10.63 5.55 10.63 5.55 0.00 221.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00		65.00	
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00		65.00	
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00		0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00		0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00		0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00		0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.02	2.61	HS 45.66	82.2
2F1	32.17	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.8	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.16	26.56	-23.79	26.35	-18.30	20.27
OPER	HS20	-30.11	34.53	-23.16	26.56	-23.79	26.35	-18.30	20.27
OPER	2F1	-17.48	19.45	-13.44	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.97	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.44	5.45	0.00	81.6
3F1	3.85	3.86	0.00	88.6
4F1	3.64	3.65	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00		65.00	
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00		65.00	
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00		0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00		0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00		0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00		0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.02	2.61	HS 45.66	82.2
2F1	32.17	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.7	9.6

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.52	34.53	-26.56	26.56	-26.36	26.35	-20.28	20.27
OPER	HS20	-34.52	34.53	-26.56	26.56	-26.36	26.35	-20.28	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.04	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.97	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.44	5.45	0.00	81.6
3F1	3.85	3.86	0.00	88.6
4F1	3.64	3.65	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50			
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00		87.50	
OPER	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50			
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00		87.50	
OPER	2F1	13.48 R	10.37	87.50	0.0	0.00	0.00	0.00		0.00	
		-34.87 L	-26.82	57.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.38 L	10.29	30.00	0.0	0.00	0.00	0.00		0.00	
		-50.17 L	-38.59	55.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.29 L	10.99	26.00	0.0	0.00	0.00	0.00		0.00	
		-54.33 L	-41.79	52.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.11 L	21.62	30.50	0.0	0.00	0.00	0.00		0.00	
		-46.75 L	-35.96	50.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.59	2.53	6.83	2.85	HS 50.56	91.0
HS20	12.64	4.21	11.38	4.76	HS 84.27	151.7
2F1	23.80	7.12	21.42	8.04	0.00	106.9
3F1	23.98	4.95	21.59	5.59	0.00	113.9
4F1	22.46	4.57	20.22	5.16	0.00	123.5
5C1	11.42	5.31	10.28	6.00	0.00	212.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.19	23.78	-2.46	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.19	23.78	-2.46	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.44	2.15	HS 43.04	77.5
HS20	39.07	3.59	HS 71.74	129.1
2F1	61.56	6.18	0.00	92.7
3F1	42.79	4.45	0.00	102.4
4F1	39.65	4.29	0.00	115.9
5C1	39.42	4.72	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.6 -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50	
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50
OPER	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50	
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50
OPER	2F1	13.48 R	10.37	87.50	0.0	0.00	0.00	0.00	
		-34.87 L	-26.82	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.38 L	10.29	30.00	0.0	0.00	0.00	0.00	
		-50.17 L	-38.59	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.29 L	10.99	26.00	0.0	0.00	0.00	0.00	
		-54.33 L	-41.79	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.11 L	21.62	30.50	0.0	0.00	0.00	0.00	
		-46.75 L	-35.96	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.08	2.64	7.08	2.64	HS 52.75	94.9
HS20	11.81	4.40	11.81	4.40	HS 87.92	158.2
2F1	22.22	7.43	22.22	7.43	0.00	111.5
3F1	22.39	5.17	22.39	5.17	0.00	118.8
4F1	20.97	4.77	20.97	4.77	0.00	128.8

5C1	10.66	5.54	10.66	5.54	0.00	221.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00			
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00		
OPER	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00			
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00		
OPER	2F1	38.38 R	29.53	90.00	0.0	0.00	0.00	0.00			
		-29.81 L	-22.93	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 R	36.01	94.00	0.0	0.00	0.00	0.00			
		-42.88 L	-32.99	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 R	33.17	94.00	0.0	0.00	0.00	0.00			
		-46.44 L	-35.73	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.36 L	41.82	33.00	0.0	0.00	0.00	0.00			
		-40.25 L	-30.96	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	3.50	2.73	3.92	HS 54.64	98.4
HS20	5.09	5.83	4.55	6.53	HS 91.07	163.9
2F1	7.88	8.95	7.05	10.02	0.00	105.7
3F1	6.46	6.22	5.78	6.97	0.00	132.9
4F1	7.02	5.74	6.28	6.43	0.00	155.0
5C1	5.57	6.63	4.98	7.42	0.00	199.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.44	20.97	-3.41	16.13
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.44	20.97	-3.41	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.59	2.60	HS 52.02	93.6
HS20	27.65	4.34	HS 86.69	156.1
2F1	60.53	7.22	0.00	108.3
3F1	42.08	5.30	0.00	122.0
4F1	38.99	5.17	0.00	139.5
5C1	25.80	5.59	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00	
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00
OPER	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00	
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00
OPER	2F1	38.38 R	29.53	90.00	0.0	0.00	0.00	0.00	
		-29.81 L	-22.93	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.01	94.00	0.0	0.00	0.00	0.00	
		-42.88 L	-32.99	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.17	94.00	0.0	0.00	0.00	0.00	
		-46.44 L	-35.73	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.36 L	41.82	33.00	0.0	0.00	0.00	0.00	
		-40.25 L	-30.96	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.64	2.84	3.64	HS 56.81	102.3
HS20	4.73	6.07	4.73	6.07	HS 94.69	170.4
2F1	7.33	9.31	7.33	9.31	0.00	109.9
3F1	6.01	6.47	6.01	6.47	0.00	138.2
4F1	6.52	5.97	6.52	5.97	0.00	161.3

5C1	5.18	6.89	5.18	6.89	0.00	207.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50			
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00		
OPER	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50			
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00		
OPER	2F1	56.49 R	43.45	92.50	0.0	0.00	0.00	0.00			
		-24.74 L	-19.03	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	96.50	0.0	0.00	0.00	0.00			
		-35.60 L	-27.38	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	96.50	0.0	0.00	0.00	0.00			
		-38.55 L	-29.66	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.37 L	55.67	35.50	0.0	0.00	0.00	0.00			
		-36.33 L	-27.95	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.42	1.79	4.93	HS 35.73	64.3
HS20	3.35	7.37	2.98	8.21	HS 59.55	107.2
2F1	5.12	11.31	4.56	12.60	0.00	68.4
3F1	4.03	7.86	3.59	8.76	0.00	82.5
4F1	3.93	7.26	3.49	8.09	0.00	94.3
5C1	4.00	7.70	3.56	8.58	0.00	142.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3	0.0	3.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.71	18.02	-5.16	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.71	18.02	-5.16	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	3.27	HS 65.44	117.8
HS20	17.97	5.45	HS 109.06	196.3
2F1	33.42	8.72	0.00	130.8
3F1	30.70	6.55	0.00	150.7
4F1	38.34	6.41	0.00	173.0
5C1	18.23	6.80	0.00	271.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50	
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00
OPER	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50	
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00
OPER	2F1	56.49 R	43.45	92.50	0.0	0.00	0.00	0.00	
		-24.74 L	-19.03	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	96.50	0.0	0.00	0.00	0.00	
		-35.60 L	-27.38	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	96.50	0.0	0.00	0.00	0.00	
		-38.55 L	-29.66	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.37 L	55.67	35.50	0.0	0.00	0.00	0.00	
		-36.33 L	-27.95	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.59	1.86	4.59	HS 37.22	67.0
HS20	3.10	7.65	3.10	7.65	HS 62.04	111.7
2F1	4.75	11.74	4.75	11.74	0.00	71.2
3F1	3.74	8.16	3.74	8.16	0.00	85.9
4F1	3.64	7.54	3.64	7.54	0.00	98.2

5C1	3.71	8.00	3.71	8.00	0.00	148.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00			
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00		
OPER	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00			
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00		
OPER	2F1	66.33 R	51.02	95.00	0.0	0.00	0.00	0.00			
		-19.68 L	-15.14	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	95.00	0.0	0.00	0.00	0.00			
		-28.31 L	-21.78	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	99.00	0.0	0.00	0.00	0.00			
		-30.66 L	-23.59	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	97.00	0.0	0.00	0.00	0.00			
		-33.85 L	-26.04	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.35	HS 30.87	55.6
HS20	2.90	9.53	2.57	10.59	HS 51.45	92.6
2F1	4.24	14.62	3.76	16.25	0.00	56.4
3F1	3.32	10.16	2.94	11.29	0.00	67.6
4F1	3.09	9.38	2.74	10.43	0.00	74.0
5C1	3.35	8.50	2.97	9.44	0.00	118.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.5
OPER	151.3	-118.5	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.28	15.04	-7.14	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.28	15.04	-7.14	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.66	4.09	HS 81.70	147.1
HS20	12.77	6.81	HS 136.16	245.1
2F1	20.86	10.98	0.00	164.7
3F1	17.46	8.47	0.00	194.8
4F1	20.41	8.48	0.00	228.9
5C1	13.61	8.49	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00	
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00
OPER	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00	
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00
OPER	2F1	66.33 R	51.02	95.00	0.0	0.00	0.00	0.00	
		-19.68 L	-15.14	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	95.00	0.0	0.00	0.00	0.00	
		-28.31 L	-21.78	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	99.00	0.0	0.00	0.00	0.00	
		-30.66 L	-23.59	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	97.00	0.0	0.00	0.00	0.00	
		-33.85 L	-26.04	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.93	1.61	5.93	HS 32.20	58.0
HS20	2.68	9.88	2.68	9.88	HS 53.67	96.6
2F1	3.92	15.17	3.92	15.17	0.00	58.9
3F1	3.07	10.54	3.07	10.54	0.00	70.5
4F1	2.86	9.73	2.86	9.73	0.00	77.2

5C1 3.10 8.82 3.10 8.82 0.00 124.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50			
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00		
OPER	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50			
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00		
OPER	2F1	67.42 R	51.86	97.50	0.0	0.00	0.00	0.00			
		-14.62 R	-11.25	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 L	69.35	77.50	0.0	0.00	0.00	0.00			
		-21.03 R	-16.18	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 L	72.44	73.50	0.0	0.00	0.00	0.00			
		-22.78 R	-17.52	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 R	66.15	138.50	0.0	0.00	0.00	0.00			
		-32.76 R	-25.20	118.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.77	7.65	1.56	8.49	HS 31.28	56.3
HS20	2.94	12.74	2.61	14.15	HS 52.13	93.8
2F1	4.14	19.87	3.66	22.06	0.00	54.9
3F1	3.09	13.81	2.74	15.33	0.00	63.0
4F1	2.96	12.75	2.62	14.16	0.00	70.8
5C1	3.24	8.87	2.87	9.84	0.00	114.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.08	12.10	-9.29	9.31
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.08	12.10	-9.29	9.31
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.34	191.4
HS20	8.87	8.86	HS 177.23	319.0
2F1	14.60	14.58	0.00	218.7
3F1	11.64	11.62	0.00	267.4
4F1	12.47	12.45	0.00	336.2
5C1	10.60	10.59	0.00	423.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.8	176.4	-158.9	176.4	-158.9	154.5	-180.8	154.5	-
OPER 301.3	279.4	-279.4	279.4	-279.4	257.5	-301.3	257.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50	
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00
OPER	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50	
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00
OPER	2F1	67.42 R	51.86	97.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.25	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 L	69.35	77.50	0.0	0.00	0.00	0.00	
		-21.03 R	-16.18	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 L	72.44	73.50	0.0	0.00	0.00	0.00	
		-22.78 R	-17.52	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 R	66.15	138.50	0.0	0.00	0.00	0.00	
		-32.76 R	-25.20	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	7.93	1.63	7.93	HS 32.64	58.8
HS20	2.72	13.22	2.72	13.22	HS 54.40	97.9
2F1	3.82	20.60	3.82	20.60	0.00	57.3
3F1	2.86	14.32	2.86	14.32	0.00	65.7
4F1	2.73	13.22	2.73	13.22	0.00	73.8

5C1	2.99	9.19	2.99	9.19	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.4	17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00			
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00		
OPER	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00			
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00		
OPER	2F1	66.33 L	51.02	80.00	0.0	0.00	0.00	0.00			
		-19.69 R	-15.14	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	80.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.79	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	76.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.60	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	78.00	0.0	0.00	0.00	0.00			
		-33.86 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.74	5.72	1.54	6.36	HS 30.85	55.5
HS20	2.90	9.53	2.57	10.59	HS 51.41	92.5
2F1	4.24	14.63	3.76	16.25	0.00	56.4
3F1	3.31	10.17	2.94	11.30	0.00	67.5
4F1	3.09	9.39	2.74	10.43	0.00	73.9
5C1	3.35	8.51	2.97	9.45	0.00	118.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.01	9.31	-11.55	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.01	9.31	-11.55	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.75	147.2
HS20	6.81	12.73	HS 136.26	245.3
2F1	10.99	20.84	0.00	164.9
3F1	8.48	17.45	0.00	194.9
4F1	8.48	20.40	0.00	229.1
5C1	8.50	13.60	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00	
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00
OPER	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00	
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00
OPER	2F1	66.33 L	51.02	80.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	80.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	76.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.60	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	78.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.93	1.61	5.93	HS 32.18	57.9
HS20	2.68	9.89	2.68	9.89	HS 53.63	96.5
2F1	3.92	15.17	3.92	15.17	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.5
4F1	2.86	9.74	2.86	9.74	0.00	77.1

5C1 3.10 8.82 3.10 8.82 0.00 123.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.1	154.3	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.1	-280.2	257.1	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50			
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00		0.00	
OPER	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50			
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00		0.00	
OPER	2F1	56.49 L	43.45	82.50	0.0	0.00	0.00	0.00		0.00	
		-24.75 R	-19.04	117.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	71.79 L	55.22	78.50	0.0	0.00	0.00	0.00		0.00	
		-35.61 R	-27.39	120.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	73.74 L	56.72	78.50	0.0	0.00	0.00	0.00		0.00	
		-38.57 R	-29.67	123.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	72.40 R	55.69	139.50	0.0	0.00	0.00	0.00		0.00	
		-36.34 R	-27.96	121.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.68	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.46	107.0
2F1	5.12	11.32	4.55	12.61	0.00	68.3
3F1	4.03	7.87	3.58	8.77	0.00	82.4
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.3 -3.8 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.00	6.73	-13.85	5.18
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.00	6.73	-13.85	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.14	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.74	HS 65.49	117.9
HS20	5.46	17.90	HS 109.15	196.5
2F1	8.73	33.40	0.00	130.9
3F1	6.56	30.68	0.00	150.8
4F1	6.41	38.33	0.00	173.1
5C1	6.80	18.22	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50	
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00
OPER	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50	
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00
OPER	2F1	56.49 L	43.45	82.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	78.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	78.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 R	55.69	139.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.96	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.17	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.94	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.54	3.63	7.54	0.00	98.1

5C1	3.70	8.01	3.70	8.01	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00			
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00		
OPER	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00			
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00		
OPER	2F1	38.39 L	29.53	85.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 L	36.02	81.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 L	33.18	81.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.40 R	41.85	142.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	122.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.05	3.51	2.73	3.92	HS 54.52	98.1
HS20	5.08	5.84	4.54	6.54	HS 90.86	163.5
2F1	7.87	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.6
4F1	7.00	5.75	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.43	0.00	198.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.5	-5.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.14	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.49	HS 52.06	93.7
HS20	4.34	27.49	HS 86.76	156.2
2F1	7.22	60.52	0.00	108.4
3F1	5.31	42.06	0.00	122.1
4F1	5.17	38.98	0.00	139.6
5C1	5.59	25.79	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 4.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00	
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00
OPER	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00	
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00
OPER	2F1	38.39 L	29.53	85.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	81.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	81.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	142.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.69	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.48	170.1
2F1	7.31	9.32	7.31	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.99	6.51	5.99	0.00	161.6

5C1 5.16 6.91 5.16 6.91 0.00 206.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50			
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00		87.50	
OPER	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50			
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00		87.50	
OPER	2F1	13.49 L	10.37	87.50	0.0	0.00	0.00	0.00		0.00	0.00
		-34.88 R	-26.83	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.45 R	10.34	145.00	0.0	0.00	0.00	0.00		0.00	0.00
		-50.18 R	-38.60	120.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.36 R	11.04	149.00	0.0	0.00	0.00	0.00		0.00	0.00
		-54.35 R	-41.81	123.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.16 R	21.66	144.50	0.0	0.00	0.00	0.00		0.00	0.00
		-46.77 R	-35.98	124.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.60	2.54	6.84	2.86	HS 50.71	91.3
HS20	12.67	4.23	11.40	4.77	HS 84.52	152.1
2F1	23.73	7.14	21.36	8.06	0.00	107.2
3F1	23.80	4.97	21.42	5.60	0.00	114.2
4F1	22.30	4.59	20.07	5.17	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.3	-108.1	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.11	-23.17	2.39	-23.76	3.21	-18.28	2.47
OPER	HS20	-30.11	3.11	-23.17	2.39	-23.76	3.21	-18.28	2.47
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.27	HS 43.08	77.5
HS20	3.59	38.78	HS 71.80	129.2
2F1	6.18	61.54	0.00	92.8
3F1	4.46	42.78	0.00	102.5
4F1	4.30	39.49	0.00	116.0
5C1	4.72	39.40	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50	
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50
OPER	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50	
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50
OPER	2F1	13.49 L	10.37	87.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	145.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 R	11.04	149.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	144.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.10	2.64	7.10	2.64	HS 52.90	95.2
HS20	11.83	4.41	11.83	4.41	HS 88.16	158.7
2F1	22.16	7.45	22.16	7.45	0.00	111.8
3F1	22.22	5.18	22.22	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1 10.61 5.56 10.61 5.56 0.00 222.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.92	3.80	24.41	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.17	26.56	-23.76	26.34	-18.28	20.26
OPER	HS20	-30.11	34.53	-23.17	26.56	-23.76	26.34	-18.28	20.26
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.25	3.98	25.25	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.92	3.80	24.41	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.34	-20.25	20.26
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.34	-20.25	20.26
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.25	3.98	25.25	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50			
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00		112.50	
OPER	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50			
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00		112.50	
OPER	2F1	13.49 R	10.37	112.50	0.0	0.00	0.00	0.00		0.00	0.00
		-34.88 L	-26.83	82.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.44 L	10.34	55.00	0.0	0.00	0.00	0.00		0.00	0.00
		-50.18 L	-38.60	80.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.35 L	11.04	51.00	0.0	0.00	0.00	0.00		0.00	0.00
		-54.35 L	-41.81	77.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.16 L	21.66	55.50	0.0	0.00	0.00	0.00		0.00	0.00
		-46.77 L	-35.98	75.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.47	2.54	6.72	2.86	HS 50.72	91.3
HS20	12.45	4.23	11.20	4.77	HS 84.54	152.2
2F1	23.73	7.15	21.35	8.06	0.00	107.2
3F1	23.81	4.97	21.43	5.61	0.00	114.3
4F1	22.30	4.59	20.07	5.18	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.6	0.0	7.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.21	23.77	-2.47	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.21	23.77	-2.47	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.29	2.15	HS 43.07	77.5
HS20	38.82	3.59	HS 71.78	129.2
2F1	61.53	6.18	0.00	92.7
3F1	42.77	4.45	0.00	102.5
4F1	39.64	4.30	0.00	116.0
5C1	39.40	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50	
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50
OPER	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50	
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50
OPER	2F1	13.49 R	10.37	112.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.44 L	10.34	55.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 L	11.04	51.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	55.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.97	2.65	6.97	2.65	HS 52.91	95.2
HS20	11.62	4.41	11.62	4.41	HS 88.19	158.7
2F1	22.15	7.45	22.15	7.45	0.00	111.8
3F1	22.23	5.18	22.23	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1	10.61	5.56	10.61	5.56	0.00	222.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	2F1	38.39 R	29.53	115.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	119.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	119.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	58.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	78.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.49	98.1
HS20	5.08	5.85	4.54	6.55	HS 90.82	163.5
2F1	7.86	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.24	5.76	6.98	0.00	132.6
4F1	7.00	5.76	6.26	6.45	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5	0.0	5.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.96	-3.43	16.12
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.96	-3.43	16.12
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.51	2.60	HS 52.04	93.7
HS20	27.51	4.34	HS 86.74	156.1
2F1	60.51	7.22	0.00	108.3
3F1	42.06	5.30	0.00	122.0
4F1	38.98	5.17	0.00	139.6
5C1	25.79	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	2F1	38.39 R	29.53	115.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	119.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	119.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	58.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.66	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.43	170.0
2F1	7.31	9.33	7.31	9.33	0.00	109.7
3F1	5.99	6.49	5.99	6.49	0.00	137.8
4F1	6.51	5.99	6.51	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50			
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00		
OPER	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50			
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00		
OPER	2F1	56.49 R	43.46	117.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	121.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	121.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	60.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.93	HS 35.65	64.2
HS20	3.34	7.38	2.97	8.23	HS 59.41	106.9
2F1	5.11	11.33	4.55	12.62	0.00	68.2
3F1	4.02	7.88	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.48	8.10	0.00	94.1
5C1	3.99	7.72	3.55	8.60	0.00	141.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.5	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.01	-5.18	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.01	-5.18	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.27	HS 65.47	117.8
HS20	17.91	5.46	HS 109.12	196.4
2F1	33.41	8.73	0.00	130.9
3F1	30.69	6.55	0.00	150.8
4F1	38.32	6.41	0.00	173.1
5C1	18.23	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50	
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00
OPER	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50	
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00
OPER	2F1	56.49 R	43.46	117.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	121.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	121.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	60.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.14	66.8
HS20	3.10	7.67	3.10	7.67	HS 61.90	111.4
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00			
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00		
OPER	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00			
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00		
OPER	2F1	66.33 R	51.02	120.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	120.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	124.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	122.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.74	5.72	1.54	6.36	HS 30.81	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.36	92.4
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.18	2.93	11.31	0.00	67.5
4F1	3.09	9.40	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.46	0.00	118.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.03	-7.16	11.56
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.03	-7.16	11.56
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.73	147.1
HS20	12.73	6.81	HS 136.22	245.2
2F1	20.85	10.99	0.00	164.8
3F1	17.45	8.47	0.00	194.9
4F1	20.40	8.48	0.00	229.0
5C1	13.61	8.49	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00	
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00
OPER	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00	
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00
OPER	2F1	66.33 R	51.02	120.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	120.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	124.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	122.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.94	1.61	5.94	HS 32.14	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.57	96.4
2F1	3.92	15.19	3.92	15.19	0.00	58.8
3F1	3.06	10.56	3.06	10.56	0.00	70.4
4F1	2.85	9.75	2.85	9.75	0.00	77.0

5C1

3.09

8.83

3.09

8.83

0.00

123.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50			
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00		
OPER	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50			
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00		
OPER	2F1	67.42 L	51.86	102.50	0.0	0.00	0.00	0.00			
		-14.62 R	-11.25	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 R	69.35	122.50	0.0	0.00	0.00	0.00			
		-21.04 R	-16.18	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 R	72.44	126.50	0.0	0.00	0.00	0.00			
		-22.78 R	-17.52	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 R	66.16	163.50	0.0	0.00	0.00	0.00			
		-32.77 R	-25.20	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.76	7.68	1.56	8.52	HS 31.24	56.2
HS20	2.94	12.79	2.60	14.20	HS 52.06	93.7
2F1	4.13	19.89	3.66	22.08	0.00	54.8
3F1	3.09	13.83	2.73	15.35	0.00	62.9
4F1	2.96	12.77	2.62	14.17	0.00	70.7
5C1	3.24	8.88	2.87	9.85	0.00	114.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.09	-9.31	9.30
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.09	-9.31	9.30
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.38	191.5
HS20	8.87	8.86	HS 177.31	319.2
2F1	14.59	14.59	0.00	218.8
3F1	11.63	11.63	0.00	267.5
4F1	12.46	12.46	0.00	336.3
5C1	10.60	10.59	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50	
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00
OPER	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50	
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00
OPER	2F1	67.42 L	51.86	102.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.25	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	122.50	0.0	0.00	0.00	0.00	
		-21.04 R	-16.18	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	126.50	0.0	0.00	0.00	0.00	
		-22.78 R	-17.52	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 R	66.16	163.50	0.0	0.00	0.00	0.00	
		-32.77 R	-25.20	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	7.96	1.63	7.96	HS 32.60	58.7
HS20	2.72	13.27	2.72	13.27	HS 54.33	97.8
2F1	3.82	20.63	3.82	20.63	0.00	57.2
3F1	2.85	14.34	2.85	14.34	0.00	65.6
4F1	2.73	13.24	2.73	13.24	0.00	73.7

5C1	2.99	9.20	2.99	9.20	0.00	119.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00			
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00		
OPER	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00			
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00		
OPER	2F1	66.33 L	51.02	105.00	0.0	0.00	0.00	0.00			
		-19.69 R	-15.14	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	105.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.79	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	101.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.60	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	103.00	0.0	0.00	0.00	0.00			
		-33.86 R	-26.05	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS 30.82	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.37	92.5
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.17	2.93	11.30	0.00	67.5
4F1	3.09	9.39	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.45	0.00	118.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	0.0
-0.2	-2.0		

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.29	-11.56	7.15
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.29	-11.56	7.15
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.65	HS 81.71	147.1
HS20	6.81	12.75	HS 136.19	245.1
2F1	10.98	20.85	0.00	164.8
3F1	8.47	17.45	0.00	194.9
4F1	8.48	20.41	0.00	229.0
5C1	8.49	13.61	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00	
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00
OPER	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00	
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00
OPER	2F1	66.33 L	51.02	105.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	105.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	101.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.60	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	103.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.05	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.94	1.61	5.94	HS 32.15	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.58	96.5
2F1	3.92	15.18	3.92	15.18	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.4
4F1	2.85	9.74	2.85	9.74	0.00	77.0

5C1

3.10

8.83

3.10

8.83

0.00

123.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50			
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00		
OPER	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50			
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00		
OPER	2F1	56.49 L	43.46	107.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	103.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	103.50	0.0	0.00	0.00	0.00			
		-38.57 R	-29.67	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 R	55.69	164.50	0.0	0.00	0.00	0.00			
		-36.35 R	-27.96	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	2.01	4.43	1.78	4.93	HS 35.67	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.44	107.0
2F1	5.12	11.32	4.55	12.62	0.00	68.2
3F1	4.03	7.87	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.72	-13.86	5.17
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.72	-13.86	5.17
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.76	HS 65.46	117.8
HS20	5.45	17.93	HS 109.09	196.4
2F1	8.73	33.41	0.00	130.9
3F1	6.55	30.70	0.00	150.7
4F1	6.41	38.33	0.00	173.0
5C1	6.80	18.23	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 L	66.52 R	89.50	0.0	65.20	50.15	117.50	
		-37.98 R	-29.21 L	158.00	0.0	-29.95	-23.04	135.00	0.00
OPER	HS20	86.48 L	66.52 R	89.50	0.0	65.20	50.15	117.50	
		-37.98 R	-29.21 L	158.00	0.0	-29.95	-23.04	135.00	0.00
OPER	2F1	56.49 L	43.46 R	107.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04 L	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22 R	103.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39 L	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72 R	103.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67 L	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69 R	164.50	0.0	0.00	0.00	0.00	
		-36.35 R	-27.96 L	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.16	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.93	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00			
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00		
OPER	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00			
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00		
OPER	2F1	38.39 L	29.53	110.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	142.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	46.82 L	36.02	106.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	145.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	43.13 L	33.18	106.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	148.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	54.40 R	41.85	167.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	147.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.45	-16.13	3.42
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.45	-16.13	3.42
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.54	HS 52.03	93.7
HS20	4.34	27.57	HS 86.72	156.1
2F1	7.22	60.52	0.00	108.3
3F1	5.30	42.07	0.00	122.0
4F1	5.17	38.99	0.00	139.5
5C1	5.59	25.79	0.00	223.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
ber								
INV.	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
166.8								
OPER	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-
278.0								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00	
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00
OPER	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00	
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00
OPER	2F1	38.39 L	29.53	110.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	106.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	106.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	167.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1 5.16 6.90 5.16 6.90 0.00 206.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50			
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50		
OPER	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50			
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50		
OPER	2F1	13.49 L	10.37	112.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 R	10.34	170.00	0.0	0.00	0.00	0.00			
		-50.18 R	-38.60	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.35 R	11.04	174.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.16 R	21.66	169.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	149.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.62	2.53	6.86	2.86	HS 50.67	91.2
HS20	12.70	4.22	11.43	4.76	HS 84.45	152.0
2F1	23.75	7.14	21.38	8.06	0.00	107.1
3F1	23.82	4.96	21.44	5.60	0.00	114.1
4F1	22.31	4.58	20.08	5.17	0.00	123.7
5C1	11.37	5.32	10.24	6.01	0.00	213.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.20	-18.29	2.46
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.20	-18.29	2.46
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.35	HS 43.06	77.5
HS20	3.59	38.92	HS 71.76	129.2
2F1	6.18	61.54	0.00	92.7
3F1	4.45	42.78	0.00	102.4
4F1	4.30	39.50	0.00	116.0
5C1	4.72	39.41	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 5.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50	
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50
OPER	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50	
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50
OPER	2F1	13.49 L	10.37	112.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	170.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 R	11.04	174.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	169.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.11	2.64	7.11	2.64	HS 52.86	95.1
HS20	11.86	4.41	11.86	4.41	HS 88.09	158.6
2F1	22.17	7.45	22.17	7.45	0.00	111.7
3F1	22.24	5.18	22.24	5.18	0.00	119.1
4F1	20.83	4.78	20.83	4.78	0.00	129.1

5C1 10.62 5.55 10.62 5.55 0.00 222.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-39.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00		135.00	
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00		135.00	
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00		0.00	
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00		0.00	
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00		0.00	
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00		0.00	
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.41	1.37	11.25	1.57	HS 27.47	49.5
HS20	20.68	2.29	18.76	2.61	HS 45.79	82.4
2F1	32.10	5.65	29.12	6.45	0.00	84.7
3F1	22.32	3.57	20.24	4.08	0.00	82.1
4F1	20.60	3.02	18.69	3.45	0.00	81.5
5C1	26.95	3.79	24.44	4.33	0.00	151.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.83	66.3
HS20	3.07	3.07	HS 61.39	110.5
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.64	1.44	11.64	1.44	HS 28.78	51.8
HS20	19.40	2.40	19.40	2.40	HS 47.97	86.3
2F1	30.12	5.92	30.12	5.92	0.00	88.8
3F1	20.94	3.74	20.94	3.74	0.00	86.0
4F1	19.33	3.16	19.33	3.16	0.00	85.4

5C1	25.28	3.97	25.28	3.97	0.00	158.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -39.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.41	1.37	11.25	1.57	HS 27.47	49.5
HS20	20.68	2.29	18.76	2.61	HS 45.79	82.4
2F1	32.10	5.65	29.12	6.45	0.00	84.7
3F1	22.32	3.57	20.24	4.08	0.00	82.1
4F1	20.60	3.02	18.69	3.45	0.00	81.5
5C1	26.95	3.79	24.44	4.33	0.00	151.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.83	66.3
HS20	3.07	3.07	HS 61.39	110.5
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.64	1.44	11.64	1.44	HS 28.78	51.8
HS20	19.40	2.40	19.40	2.40	HS 47.97	86.3
2F1	30.12	5.92	30.12	5.92	0.00	88.8
3F1	20.94	3.74	20.94	3.74	0.00	86.0
4F1	19.33	3.16	19.33	3.16	0.00	85.4

5C1	25.28	3.97	25.28	3.97	0.00	158.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50			
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50		
OPER	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50			
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50		
OPER	2F1	13.49 R	10.37	137.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	107.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	13.45 L	10.34	80.00	0.0	0.00	0.00	0.00			
		-50.18 L	-38.60	105.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.36 L	11.04	76.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.81	102.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	28.16 L	21.66	80.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.98	100.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.49	2.53	6.74	2.86	HS 50.67	91.2
HS20	12.49	4.22	11.24	4.76	HS 84.45	152.0
2F1	23.75	7.14	21.38	8.06	0.00	107.1
3F1	23.82	4.96	21.44	5.60	0.00	114.1
4F1	22.31	4.58	20.08	5.17	0.00	123.7
5C1	11.37	5.32	10.24	6.01	0.00	213.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.20	23.78	-2.46	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.20	23.78	-2.46	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.35	2.15	HS 43.06	77.5
HS20	38.92	3.59	HS 71.76	129.2
2F1	61.54	6.18	0.00	92.7
3F1	42.78	4.45	0.00	102.4
4F1	39.65	4.30	0.00	116.0
5C1	39.41	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50	
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50
OPER	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50	
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50
OPER	2F1	13.49 R	10.37	137.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	80.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	76.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	80.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.99	2.64	6.99	2.64	HS 52.85	95.1
HS20	11.66	4.41	11.66	4.41	HS 88.09	158.6
2F1	22.17	7.45	22.17	7.45	0.00	111.7
3F1	22.24	5.18	22.24	5.18	0.00	119.1
4F1	20.83	4.78	20.83	4.78	0.00	129.0

5C1 10.62 5.55 10.62 5.55 0.00 222.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00			
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00		
OPER	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00			
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00		
OPER	2F1	38.39 R	29.53	140.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-29.82 L	-22.94	107.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-42.90 L	-33.00	105.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-46.46 L	-35.74	102.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	83.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-40.27 L	-30.97	103.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.45	20.97	-3.42	16.13
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.45	20.97	-3.42	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.54	2.60	HS 52.03	93.7
HS20	27.57	4.34	HS 86.72	156.1
2F1	60.52	7.22	0.00	108.3
3F1	42.07	5.30	0.00	122.0
4F1	38.99	5.17	0.00	139.5
5C1	25.79	5.59	0.00	223.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
ber								
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00	
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00
OPER	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00	
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00
OPER	2F1	38.39 R	29.53	140.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	144.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	144.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	83.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1

5.16

6.90

5.16

6.90

0.00

206.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50			
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00		
OPER	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50			
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00		
OPER	2F1	56.49 R	43.46	142.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	146.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	146.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	85.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.67	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.44	107.0
2F1	5.12	11.32	4.55	12.62	0.00	68.2
3F1	4.03	7.87	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.3	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.72	18.02	-5.17	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.72	18.02	-5.17	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.76	3.27	HS 65.46	117.8
HS20	17.93	5.45	HS 109.09	196.4
2F1	33.41	8.73	0.00	130.9
3F1	30.70	6.55	0.00	150.7
4F1	38.33	6.41	0.00	173.0
5C1	18.23	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.8	10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50	
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00
OPER	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50	
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00
OPER	2F1	56.49 R	43.46	142.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	146.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	146.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	85.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.16	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.93	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.4	18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00			
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00		
OPER	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00			
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00		
OPER	2F1	66.33 R	51.02	145.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	145.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	149.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	147.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.05	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS 30.82	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.37	92.5
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.17	2.93	11.30	0.00	67.5
4F1	3.09	9.39	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.45	0.00	118.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.03	-7.15	11.56
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.03	-7.15	11.56
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.65	4.09	HS 81.71	147.1
HS20	12.75	6.81	HS 136.19	245.1
2F1	20.85	10.98	0.00	164.8
3F1	17.45	8.47	0.00	194.9
4F1	20.41	8.48	0.00	229.0
5C1	13.61	8.49	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00	
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00
OPER	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00	
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00
OPER	2F1	66.33 R	51.02	145.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	145.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	149.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	147.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.05	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.94	1.61	5.94	HS 32.15	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.58	96.5
2F1	3.92	15.18	3.92	15.18	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.4
4F1	2.85	9.74	2.85	9.74	0.00	77.0

5C1

3.10

8.83

3.10

8.83

0.00

123.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50			
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00		0.00	
OPER	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50			
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00		0.00	
OPER	2F1	67.42 L	51.86	127.50	0.0	0.00	0.00	0.00		0.00	
		-14.62 L	-11.25	107.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	90.16 R	69.35	147.50	0.0	0.00	0.00	0.00		0.00	
		-21.04 L	-16.18	105.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	94.17 R	72.44	151.50	0.0	0.00	0.00	0.00		0.00	
		-22.78 L	-17.52	102.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	86.00 L	66.16	86.50	0.0	0.00	0.00	0.00		0.00	
		-32.77 L	-25.20	106.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.68	1.56	8.52	HS 31.24	56.2
HS20	2.94	12.79	2.60	14.20	HS 52.06	93.7
2F1	4.13	19.89	3.66	22.08	0.00	54.8
3F1	3.09	13.83	2.73	15.35	0.00	62.9
4F1	2.96	12.77	2.62	14.17	0.00	70.7
5C1	3.24	8.88	2.87	9.85	0.00	114.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.09	12.10	-9.30	9.31
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.09	12.10	-9.30	9.31
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.36	191.4
HS20	8.87	8.86	HS 177.27	319.1
2F1	14.60	14.58	0.00	218.7
3F1	11.64	11.63	0.00	267.4
4F1	12.46	12.45	0.00	336.3
5C1	10.60	10.59	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50	
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00
OPER	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50	
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00
OPER	2F1	67.42 L	51.86	127.50	0.0	0.00	0.00	0.00	
		-14.62 L	-11.25	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	147.50	0.0	0.00	0.00	0.00	
		-21.04 L	-16.18	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	151.50	0.0	0.00	0.00	0.00	
		-22.78 L	-17.52	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 L	66.16	86.50	0.0	0.00	0.00	0.00	
		-32.77 L	-25.20	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	7.96	1.63	7.96	HS 32.60	58.7
HS20	2.72	13.27	2.72	13.27	HS 54.33	97.8
2F1	3.82	20.63	3.82	20.63	0.00	57.2
3F1	2.85	14.34	2.85	14.34	0.00	65.6
4F1	2.73	13.24	2.73	13.24	0.00	73.7

5C1	2.99	9.20	2.99	9.20	0.00	119.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00			
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00		
OPER	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00			
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00		
OPER	2F1	66.33 L	51.02	130.00	0.0	0.00	0.00	0.00			
		-19.69 R	-15.14	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	130.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.79	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	126.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.59	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	128.00	0.0	0.00	0.00	0.00			
		-33.86 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS 30.81	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.36	92.4
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.18	2.93	11.31	0.00	67.5
4F1	3.09	9.40	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.46	0.00	118.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.30	-11.56	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.30	-11.56	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.73	147.1
HS20	6.81	12.73	HS 136.22	245.2
2F1	10.99	20.85	0.00	164.8
3F1	8.47	17.45	0.00	194.9
4F1	8.48	20.40	0.00	229.0
5C1	8.49	13.61	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00	
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00
OPER	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00	
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00
OPER	2F1	66.33 L	51.02	130.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	130.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	126.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.59	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	128.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.94	1.61	5.94	HS 32.14	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.57	96.4
2F1	3.92	15.19	3.92	15.19	0.00	58.8
3F1	3.06	10.56	3.06	10.56	0.00	70.4
4F1	2.85	9.75	2.85	9.75	0.00	77.0

5C1

3.09

8.83

3.09

8.83

0.00

123.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50			
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00		0.00	
OPER	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50			
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00		0.00	
OPER	2F1	56.49 L	43.46	132.50	0.0	0.00	0.00	0.00		0.00	
		-24.75 R	-19.04	167.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	71.79 L	55.22	128.50	0.0	0.00	0.00	0.00		0.00	
		-35.61 R	-27.39	170.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	73.74 L	56.72	128.50	0.0	0.00	0.00	0.00		0.00	
		-38.57 R	-29.67	173.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	72.39 R	55.69	189.50	0.0	0.00	0.00	0.00		0.00	
		-36.34 R	-27.96	171.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.93	HS 35.65	64.2
HS20	3.34	7.38	2.97	8.23	HS 59.41	106.9
2F1	5.11	11.33	4.55	12.62	0.00	68.2
3F1	4.02	7.88	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.48	8.10	0.00	94.1
5C1	3.99	7.72	3.55	8.60	0.00	141.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.8	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-67.3 72.3
OPER	151.3	-112.2 120.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.01	6.73	-13.86	5.18
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.01	6.73	-13.86	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	3.27	10.74	HS 65.47	117.8
HS20	5.46	17.91	HS 109.12	196.4
2F1	8.73	33.41	0.00	130.9
3F1	6.55	30.69	0.00	150.8
4F1	6.41	38.32	0.00	173.1
5C1	6.80	18.23	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50	
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00
OPER	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50	
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00
OPER	2F1	56.49 L	43.46	132.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	128.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	128.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 R	55.69	189.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.96	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.14	66.8
HS20	3.10	7.67	3.10	7.67	HS 61.90	111.4
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00			
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00		210.00	
OPER	HS20	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00			
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00		210.00	
OPER	2F1	38.39 L	29.53	135.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	167.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	46.82 L	36.02	131.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	170.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	43.13 L	33.18	131.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	173.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	54.40 R	41.85	192.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	172.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.05	3.51	2.72	3.93	HS 54.49	98.1
HS20	5.08	5.85	4.54	6.55	HS 90.82	163.5
2F1	7.86	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.24	5.76	6.98	0.00	132.6
4F1	7.00	5.76	6.26	6.45	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.96	4.46	-16.12	3.43
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.96	4.46	-16.12	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.51	HS 52.04	93.7
HS20	4.34	27.51	HS 86.74	156.1
2F1	7.22	60.51	0.00	108.3
3F1	5.30	42.06	0.00	122.0
4F1	5.17	38.98	0.00	139.6
5C1	5.59	25.79	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 6.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	59.43 L	45.72 R	117.00	0.0	45.29	34.84	145.00	
		-45.75 R	-35.19 L	183.00	0.0	-35.34	-27.18	160.00	210.00
OPER	HS20	59.43 L	45.72 R	117.00	0.0	45.29	34.84	145.00	
		-45.75 R	-35.19 L	183.00	0.0	-35.34	-27.18	160.00	210.00
OPER	2F1	38.39 L	29.53 R	135.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94 L	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02 R	131.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00 L	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18 R	131.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74 L	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85 R	192.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97 L	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.66	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.43	170.0
2F1	7.31	9.33	7.31	9.33	0.00	109.7
3F1	5.99	6.49	5.99	6.49	0.00	137.8
4F1	6.51	5.99	6.51	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50			
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00		137.50	
OPER	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50			
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00		137.50	
OPER	2F1	13.49 L	10.37	137.50	0.0	0.00	0.00	0.00		0.00	
		-34.88 R	-26.83	167.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.44 R	10.34	195.00	0.0	0.00	0.00	0.00		0.00	
		-50.18 R	-38.60	170.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.35 R	11.04	199.00	0.0	0.00	0.00	0.00		0.00	
		-54.35 R	-41.81	173.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.16 R	21.66	194.50	0.0	0.00	0.00	0.00		0.00	
		-46.77 R	-35.97	174.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.60	2.54	6.84	2.86	HS 50.72	91.3
HS20	12.66	4.23	11.40	4.77	HS 84.54	152.2
2F1	23.73	7.15	21.35	8.06	0.00	107.2
3F1	23.81	4.97	21.43	5.61	0.00	114.3
4F1	22.30	4.59	20.07	5.18	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6 -7.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.77	3.21	-18.29	2.47
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.77	3.21	-18.29	2.47
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.29	HS 43.07	77.5
HS20	3.59	38.82	HS 71.78	129.2
2F1	6.18	61.53	0.00	92.7
3F1	4.45	42.77	0.00	102.5
4F1	4.30	39.49	0.00	116.0
5C1	4.72	39.40	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50	
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50
OPER	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50	
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50
OPER	2F1	13.49 L	10.37	137.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.44 R	10.34	195.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 R	11.04	199.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	194.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.97	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.09	2.65	7.09	2.65	HS 52.91	95.2
HS20	11.82	4.41	11.82	4.41	HS 88.19	158.7
2F1	22.15	7.45	22.15	7.45	0.00	111.8
3F1	22.23	5.18	22.23	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1	10.61	5.56	10.61	5.56	0.00	222.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00			
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.82	3.80	24.32	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.77	26.33	-18.29	20.25
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.77	26.33	-18.29	20.25
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00	
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.16	3.98	25.16	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00			
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.82	3.80	24.32	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.34	26.33	-20.26	20.25
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.34	26.33	-20.26	20.25
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00	
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.16	3.98	25.16	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50			
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50		
OPER	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50			
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50		
OPER	2F1	13.49 R	10.37	162.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-34.88 L	-26.83	132.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	105.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-50.18 L	-38.60	130.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	101.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-54.35 L	-41.81	127.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	105.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-46.77 L	-35.98	125.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.47	2.54	6.73	2.86	HS 50.71	91.3
HS20	12.45	4.23	11.21	4.77	HS 84.52	152.1
2F1	23.73	7.14	21.36	8.06	0.00	107.2
3F1	23.80	4.97	21.42	5.60	0.00	114.2
4F1	22.30	4.59	20.07	5.17	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.3	-124.6	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.11	-2.29	23.17	-3.21	23.76	-2.47	18.28
OPER	HS20	-2.98	30.11	-2.29	23.17	-3.21	23.76	-2.47	18.28
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.27	2.15	HS 43.08	77.5
HS20	38.78	3.59	HS 71.80	129.2
2F1	61.54	6.18	0.00	92.8
3F1	42.78	4.46	0.00	102.5
4F1	39.64	4.30	0.00	116.0
5C1	39.40	4.72	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50	
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50
OPER	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50	
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50
OPER	2F1	13.49 R	10.37	162.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	105.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	101.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	105.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.98	2.64	6.98	2.64	HS 52.90	95.2
HS20	11.63	4.41	11.63	4.41	HS 88.16	158.7
2F1	22.16	7.45	22.16	7.45	0.00	111.8
3F1	22.22	5.18	22.22	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.1

5C1 10.61 5.56 10.61 5.56 0.00 222.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00			
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00		90.00	
OPER	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00			
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00		90.00	
OPER	2F1	38.39 R	29.53	165.00	0.0	0.00	0.00	0.00		0.00	
		-29.82 L	-22.94	132.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	46.82 R	36.02	169.00	0.0	0.00	0.00	0.00		0.00	
		-42.90 L	-33.00	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	43.13 R	33.18	169.00	0.0	0.00	0.00	0.00		0.00	
		-46.46 L	-35.74	127.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	54.40 L	41.85	108.00	0.0	0.00	0.00	0.00		0.00	
		-40.27 L	-30.97	128.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.05	3.51	2.73	3.92	HS 54.52	98.1
HS20	5.08	5.84	4.54	6.54	HS 90.86	163.5
2F1	7.87	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.6
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.06	93.7
HS20	27.49	4.34	HS 86.76	156.2
2F1	60.52	7.22	0.00	108.4
3F1	42.06	5.31	0.00	122.1
4F1	38.98	5.17	0.00	139.6
5C1	25.79	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00	
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00
OPER	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00	
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00
OPER	2F1	38.39 R	29.53	165.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	169.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	169.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	108.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.69	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.48	170.1
2F1	7.31	9.32	7.31	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.99	6.51	5.99	0.00	161.6

5C1 5.16 6.91 5.16 6.91 0.00 206.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.1	154.3	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.1	-280.2	257.1	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50			
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00		
OPER	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50			
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00		
OPER	2F1	56.49 R	43.46	167.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	171.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	171.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	110.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.68	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.46	107.0
2F1	5.12	11.32	4.55	12.61	0.00	68.3
3F1	4.03	7.87	3.58	8.77	0.00	82.4
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.5	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.00	-5.18	13.85
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.00	-5.18	13.85
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.27	HS 65.49	117.9
HS20	17.90	5.46	HS 109.15	196.5
2F1	33.40	8.73	0.00	130.9
3F1	30.68	6.56	0.00	150.8
4F1	38.33	6.41	0.00	173.1
5C1	18.22	6.80	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50	
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00
OPER	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50	
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00
OPER	2F1	56.49 R	43.46	167.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	171.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	171.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	110.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.17	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.94	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.54	3.63	7.54	0.00	98.1

5C1	3.70	8.01	3.70	8.01	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00			
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00		
OPER	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00			
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00		
OPER	2F1	66.33 R	51.02	170.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	170.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	174.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	172.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.74	5.72	1.54	6.36	HS 30.85	55.5
HS20	2.90	9.53	2.57	10.59	HS 51.41	92.5
2F1	4.24	14.63	3.76	16.25	0.00	56.4
3F1	3.31	10.17	2.94	11.30	0.00	67.5
4F1	3.09	9.39	2.74	10.43	0.00	73.9
5C1	3.35	8.51	2.97	9.45	0.00	118.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.4	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.01	-7.16	11.55
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.01	-7.16	11.55
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.75	147.2
HS20	12.73	6.81	HS 136.26	245.3
2F1	20.84	10.99	0.00	164.9
3F1	17.45	8.48	0.00	194.9
4F1	20.40	8.48	0.00	229.1
5C1	13.60	8.50	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00	
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00
OPER	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00	
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00
OPER	2F1	66.33 R	51.02	170.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	170.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	174.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	172.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.93	1.61	5.93	HS 32.18	57.9
HS20	2.68	9.89	2.68	9.89	HS 53.63	96.5
2F1	3.92	15.17	3.92	15.17	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.5
4F1	2.86	9.74	2.86	9.74	0.00	77.1

5C1	3.10	8.82	3.10	8.82	0.00	123.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50			
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00		
OPER	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50			
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00		
OPER	2F1	67.42 L	51.86	152.50	0.0	0.00	0.00	0.00			
		-14.62 L	-11.25	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 R	69.35	172.50	0.0	0.00	0.00	0.00			
		-21.03 L	-16.18	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 R	72.44	176.50	0.0	0.00	0.00	0.00			
		-22.78 L	-17.52	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 L	66.15	111.50	0.0	0.00	0.00	0.00			
		-32.76 L	-25.20	131.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	7.65	1.56	8.49	HS 31.28	56.3
HS20	2.94	12.74	2.61	14.15	HS 52.13	93.8
2F1	4.14	19.87	3.66	22.06	0.00	54.9
3F1	3.09	13.81	2.74	15.33	0.00	63.0
4F1	2.96	12.75	2.62	14.16	0.00	70.8
5C1	3.24	8.87	2.87	9.84	0.00	114.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.08	-9.31	9.29
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.08	-9.31	9.29
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.40	191.5
HS20	8.87	8.87	HS 177.33	319.2
2F1	14.59	14.59	0.00	218.8
3F1	11.63	11.63	0.00	267.5
4F1	12.46	12.46	0.00	336.4
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.8	176.4	-158.9	176.4	-158.9	154.5	-180.8	154.5	-
OPER 301.3	279.4	-279.4	279.4	-279.4	257.5	-301.3	257.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50	
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00
OPER	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50	
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00
OPER	2F1	67.42 L	51.86	152.50	0.0	0.00	0.00	0.00	
		-14.62 L	-11.25	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	172.50	0.0	0.00	0.00	0.00	
		-21.03 L	-16.18	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	176.50	0.0	0.00	0.00	0.00	
		-22.78 L	-17.52	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 L	66.15	111.50	0.0	0.00	0.00	0.00	
		-32.76 L	-25.20	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	7.93	1.63	7.93	HS 32.64	58.8
HS20	2.72	13.22	2.72	13.22	HS 54.40	97.9
2F1	3.82	20.60	3.82	20.60	0.00	57.3
3F1	2.86	14.32	2.86	14.32	0.00	65.7
4F1	2.73	13.22	2.73	13.22	0.00	73.8

5C1	2.99	9.19	2.99	9.19	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00			
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00		
OPER	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00			
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00		
OPER	2F1	66.33 L	51.02	155.00	0.0	0.00	0.00	0.00			
		-19.68 R	-15.14	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	155.00	0.0	0.00	0.00	0.00			
		-28.31 R	-21.78	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	151.00	0.0	0.00	0.00	0.00			
		-30.66 R	-23.59	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	153.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.35	HS 30.87	55.6
HS20	2.90	9.53	2.57	10.59	HS 51.45	92.6
2F1	4.24	14.62	3.76	16.25	0.00	56.4
3F1	3.32	10.16	2.94	11.29	0.00	67.6
4F1	3.09	9.38	2.74	10.43	0.00	74.0
5C1	3.35	8.50	2.97	9.44	0.00	118.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.1
OPER	151.3	-114.2	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.28	-11.57	7.14
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.28	-11.57	7.14
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.70	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.66	HS 81.70	147.1
HS20	6.81	12.77	HS 136.16	245.1
2F1	10.98	20.86	0.00	164.7
3F1	8.47	17.46	0.00	194.8
4F1	8.48	20.41	0.00	228.9
5C1	8.49	13.61	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00
OPER	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00
OPER	2F1	66.33 L	51.02	155.00	0.0	0.00	0.00	0.00
		-19.68 R	-15.14	192.50	0.0	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	155.00	0.0	0.00	0.00	0.00
		-28.31 R	-21.78	195.00	0.0	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	151.00	0.0	0.00	0.00	0.00
		-30.66 R	-23.59	198.00	0.0	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	153.00	0.0	0.00	0.00	0.00
		-33.85 R	-26.04	194.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.93	1.61	5.93	HS 32.20	58.0
HS20	2.68	9.88	2.68	9.88	HS 53.67	96.6
2F1	3.92	15.17	3.92	15.17	0.00	58.9
3F1	3.07	10.54	3.07	10.54	0.00	70.5
4F1	2.86	9.73	2.86	9.73	0.00	77.2

5C1	3.10	8.82	3.10	8.82	0.00	124.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50			
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00		
OPER	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50			
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00		
OPER	2F1	56.49 L	43.45	157.50	0.0	0.00	0.00	0.00			
		-24.74 R	-19.03	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	153.50	0.0	0.00	0.00	0.00			
		-35.60 R	-27.38	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	153.50	0.0	0.00	0.00	0.00			
		-38.55 R	-29.66	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.37 R	55.67	214.50	0.0	0.00	0.00	0.00			
		-36.33 R	-27.95	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.42	1.79	4.93	HS 35.73	64.3
HS20	3.35	7.37	2.98	8.21	HS 59.56	107.2
2F1	5.12	11.31	4.56	12.60	0.00	68.4
3F1	4.03	7.86	3.59	8.76	0.00	82.5
4F1	3.93	7.26	3.49	8.09	0.00	94.3
5C1	4.00	7.70	3.56	8.58	0.00	142.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.3	-3.9	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.71	-13.86	5.16
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.71	-13.86	5.16
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.47	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.78	HS 65.44	117.8
HS20	5.45	17.97	HS 109.06	196.3
2F1	8.72	33.42	0.00	130.8
3F1	6.55	30.70	0.00	150.7
4F1	6.41	38.34	0.00	173.0
5C1	6.80	18.23	0.00	271.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.700

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50	
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00
OPER	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50	
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00
OPER	2F1	56.49 L	43.45	157.50	0.0	0.00	0.00	0.00	
		-24.74 R	-19.03	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	153.50	0.0	0.00	0.00	0.00	
		-35.60 R	-27.38	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	153.50	0.0	0.00	0.00	0.00	
		-38.55 R	-29.66	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.37 R	55.67	214.50	0.0	0.00	0.00	0.00	
		-36.33 R	-27.95	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.59	1.86	4.59	HS 37.22	67.0
HS20	3.10	7.65	3.10	7.65	HS 62.04	111.7
2F1	4.75	11.74	4.75	11.74	0.00	71.2
3F1	3.74	8.16	3.74	8.16	0.00	85.9
4F1	3.64	7.54	3.64	7.54	0.00	98.2

5C1	3.71	8.00	3.71	8.00	0.00	148.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00			
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00		
OPER	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00			
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00		
OPER	2F1	38.38 L	29.53	160.00	0.0	0.00	0.00	0.00			
		-29.81 R	-22.93	192.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	46.82 L	36.01	156.00	0.0	0.00	0.00	0.00			
		-42.88 R	-32.99	195.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	43.13 L	33.17	156.00	0.0	0.00	0.00	0.00			
		-46.44 R	-35.73	198.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	54.36 R	41.82	217.00	0.0	0.00	0.00	0.00			
		-40.25 R	-30.96	197.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.06	3.50	2.73	3.92	HS 54.64	98.4
HS20	5.09	5.83	4.55	6.53	HS 91.07	163.9
2F1	7.88	8.95	7.05	10.02	0.00	105.8
3F1	6.46	6.22	5.78	6.97	0.00	132.9
4F1	7.02	5.74	6.28	6.43	0.00	155.0
5C1	5.57	6.63	4.98	7.42	0.00	199.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.44	-16.13	3.41
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.44	-16.13	3.41
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.59	HS 52.02	93.6
HS20	4.34	27.65	HS 86.69	156.1
2F1	7.22	60.53	0.00	108.3
3F1	5.30	42.08	0.00	122.0
4F1	5.17	38.99	0.00	139.5
5C1	5.59	25.80	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00	
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00
OPER	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00	
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00
OPER	2F1	38.38 L	29.53	160.00	0.0	0.00	0.00	0.00	
		-29.81 R	-22.93	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.01	156.00	0.0	0.00	0.00	0.00	
		-42.88 R	-32.99	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.17	156.00	0.0	0.00	0.00	0.00	
		-46.44 R	-35.73	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.36 R	41.82	217.00	0.0	0.00	0.00	0.00	
		-40.25 R	-30.96	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.64	2.84	3.64	HS 56.81	102.3
HS20	4.73	6.07	4.73	6.07	HS 94.69	170.4
2F1	7.33	9.31	7.33	9.31	0.00	109.9
3F1	6.01	6.47	6.01	6.47	0.00	138.2
4F1	6.52	5.97	6.52	5.97	0.00	161.3

5C1	5.18	6.89	5.18	6.89	0.00	207.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 7.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50			
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50		
OPER	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50			
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50		
OPER	2F1	13.48 L	10.37	162.50	0.0	0.00	0.00	0.00			
		-34.87 R	-26.82	192.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.38 R	10.29	220.00	0.0	0.00	0.00	0.00			
		-50.17 R	-38.59	195.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	14.29 R	10.99	224.00	0.0	0.00	0.00	0.00			
		-54.33 R	-41.79	198.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	28.11 R	21.62	219.50	0.0	0.00	0.00	0.00			
		-46.75 R	-35.96	199.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.72	2.53	6.95	2.85	HS 50.56	91.0
HS20	12.86	4.21	11.58	4.76	HS 84.27	151.7
2F1	23.80	7.12	21.42	8.04	0.00	106.9
3F1	23.98	4.95	21.59	5.59	0.00	113.9
4F1	22.46	4.57	20.22	5.16	0.00	123.5
5C1	11.42	5.31	10.28	6.00	0.00	212.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

7.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.0	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.19	-18.29	2.46
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.19	-18.29	2.46
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.44	HS 43.04	77.5
HS20	3.59	39.07	HS 71.74	129.1
2F1	6.18	61.55	0.00	92.7
3F1	4.45	42.79	0.00	102.4
4F1	4.29	39.51	0.00	115.9
5C1	4.72	39.42	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50	
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50
OPER	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50	
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50
OPER	2F1	13.48 L	10.37	162.50	0.0	0.00	0.00	0.00	
		-34.87 R	-26.82	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.38 R	10.29	220.00	0.0	0.00	0.00	0.00	
		-50.17 R	-38.59	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.29 R	10.99	224.00	0.0	0.00	0.00	0.00	
		-54.33 R	-41.79	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.11 R	21.62	219.50	0.0	0.00	0.00	0.00	
		-46.75 R	-35.96	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.21	2.64	7.21	2.64	HS 52.75	94.9
HS20	12.01	4.40	12.01	4.40	HS 87.92	158.2
2F1	22.22	7.43	22.22	7.43	0.00	111.5
3F1	22.39	5.17	22.39	5.17	0.00	118.8
4F1	20.97	4.77	20.97	4.77	0.00	128.8

5C1	10.66	5.54	10.66	5.54	0.00	221.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.01	2.61	HS 45.66	82.2
2F1	32.16	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.52	-23.17	26.56	-23.78	26.36	-18.29	20.28
OPER	HS20	-30.12	34.52	-23.17	26.56	-23.78	26.36	-18.29	20.28
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.04	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.45	5.44	0.00	81.6
3F1	3.86	3.85	0.00	88.6
4F1	3.65	3.64	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.01	2.61	HS 45.66	82.2
2F1	32.16	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.52	-26.56	26.56	-26.35	26.36	-20.27	20.28
OPER	HS20	-34.53	34.52	-26.56	26.56	-26.35	26.36	-20.27	20.28
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.04	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.97	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.45	5.44	0.00	81.6
3F1	3.86	3.85	0.00	88.6
4F1	3.65	3.64	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50			
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00		187.50	
OPER	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50			
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00		187.50	
OPER	2F1	13.49 R	10.38	187.50	0.0	0.00	0.00	0.00		0.00	
		-34.88 L	-26.83	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.45 L	10.34	130.00	0.0	0.00	0.00	0.00		0.00	
		-50.19 L	-38.60	155.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.36 L	11.04	126.00	0.0	0.00	0.00	0.00		0.00	
		-54.35 L	-41.81	152.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.17 L	21.67	130.50	0.0	0.00	0.00	0.00		0.00	
		-46.77 L	-35.98	150.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.54	2.53	6.79	2.86	HS 50.60	91.1
HS20	12.57	4.22	11.32	4.76	HS 84.33	151.8
2F1	23.76	7.13	21.39	8.05	0.00	106.9
3F1	23.84	4.95	21.46	5.59	0.00	114.0
4F1	22.33	4.57	20.10	5.16	0.00	123.5
5C1	11.38	5.32	10.25	6.00	0.00	212.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.9	64.8
OPER	151.3	-124.8	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.94	30.11	-2.26	23.16	-3.13	23.79	-2.41	18.30
OPER	HS20	-2.94	30.11	-2.26	23.16	-3.13	23.79	-2.41	18.30
OPER	2F1	-2.02	17.48	-1.55	13.44	0.00	0.00	0.00	0.00
OPER	3F1	-2.90	24.26	-2.23	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	25.15	-2.41	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.15	22.91	-2.42	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.89	2.15	HS 43.01	77.4
HS20	39.82	3.58	HS 71.68	129.0
2F1	61.90	6.18	0.00	92.6
3F1	43.03	4.45	0.00	102.3
4F1	39.87	4.29	0.00	115.8
5C1	39.60	4.71	0.00	188.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50	
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50
OPER	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50	
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50
OPER	2F1	13.49 R	10.38	187.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	130.00	0.0	0.00	0.00	0.00	
		-50.19 L	-38.60	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	126.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.17 L	21.67	130.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.04	2.64	7.04	2.64	HS 52.78	95.0
HS20	11.74	4.40	11.74	4.40	HS 87.97	158.4
2F1	22.19	7.44	22.19	7.44	0.00	111.6
3F1	22.26	5.17	22.26	5.17	0.00	118.9
4F1	20.85	4.77	20.85	4.77	0.00	128.9

5C1 10.63 5.55 10.63 5.55 0.00 221.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00			
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00		
OPER	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00			
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00		
OPER	2F1	38.39 R	29.53	190.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 R	36.02	194.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 R	33.18	194.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	152.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 L	41.85	133.00	0.0	0.00	0.00	0.00			
		-40.27 L	-30.97	153.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.97	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5	0.0	5.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.3	-122.8	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.94	25.39	-2.26	19.53	-4.39	20.98	-3.38	16.14
OPER	HS20	-2.94	25.39	-2.26	19.53	-4.39	20.98	-3.38	16.14
OPER	2F1	-2.02	15.25	-1.55	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.90	20.76	-2.23	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	21.31	-2.41	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.74	19.70	-3.65	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.78	2.60	HS 51.98	93.6
HS20	27.97	4.33	HS 86.63	155.9
2F1	60.88	7.21	0.00	108.2
3F1	42.31	5.30	0.00	121.9
4F1	39.21	5.16	0.00	139.4
5C1	25.90	5.58	0.00	223.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00	
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00
OPER	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00	
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00
OPER	2F1	38.39 R	29.53	190.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	194.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	194.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	133.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1 5.16 6.90 5.16 6.90 0.00 206.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50			
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00		
OPER	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50			
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00		
OPER	2F1	56.49 R	43.45	192.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.78 R	55.22	196.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.73 R	56.72	196.50	0.0	0.00	0.00	0.00			
		-38.56 L	-29.66	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.39 L	55.68	135.50	0.0	0.00	0.00	0.00			
		-36.34 L	-27.95	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.94	HS 35.62	64.1
HS20	3.34	7.39	2.97	8.23	HS 59.37	106.9
2F1	5.11	11.34	4.54	12.63	0.00	68.2
3F1	4.02	7.88	3.58	8.78	0.00	82.2
4F1	3.91	7.28	3.48	8.11	0.00	94.0
5C1	3.99	7.72	3.55	8.60	0.00	141.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.56	-3.40	15.82	-6.66	18.03	-5.13	13.87
OPER	HS20	-4.42	20.56	-3.40	15.82	-6.66	18.03	-5.13	13.87
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	17.50	-2.41	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.60	16.50	-5.07	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.27	HS 65.39	117.7
HS20	18.11	5.45	HS 108.98	196.2
2F1	33.44	8.72	0.00	130.7
3F1	30.72	6.55	0.00	150.6
4F1	38.55	6.40	0.00	172.9
5C1	18.30	6.79	0.00	271.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50	
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00
OPER	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50	
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00
OPER	2F1	56.49 R	43.45	192.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.78 R	55.22	196.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.73 R	56.72	196.50	0.0	0.00	0.00	0.00	
		-38.56 L	-29.66	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 L	55.68	135.50	0.0	0.00	0.00	0.00	
		-36.34 L	-27.95	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.60	1.86	4.60	HS 37.11	66.8
HS20	3.09	7.67	3.09	7.67	HS 61.85	111.3
2F1	4.74	11.77	4.74	11.77	0.00	71.0
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	97.9

5C1	3.69	8.02	3.69	8.02	0.00	147.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00			
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00		
OPER	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00			
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00		
OPER	2F1	66.32 R	51.01	195.00	0.0	0.00	0.00	0.00			
		-19.68 L	-15.14	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.90 R	65.30	195.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.78	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.07 R	70.06	199.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.59	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.97 R	64.59	197.00	0.0	0.00	0.00	0.00			
		-33.83 L	-26.02	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.74	1.54	6.37	HS 30.74	55.3
HS20	2.89	9.56	2.56	10.62	HS 51.23	92.2
2F1	4.23	14.67	3.75	16.30	0.00	56.2
3F1	3.30	10.20	2.93	11.33	0.00	67.3
4F1	3.08	9.42	2.73	10.46	0.00	73.7
5C1	3.34	8.54	2.96	9.48	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.48	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.68	13.45	-6.68	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.70	4.08	HS 81.63	146.9
HS20	12.84	6.80	HS 136.05	244.9
2F1	20.87	10.98	0.00	164.6
3F1	17.47	8.46	0.00	194.7
4F1	20.42	8.47	0.00	228.8
5C1	13.67	8.48	0.00	339.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.5	-179.7	155.5	-
OPER 299.6	279.4	-279.4	279.4	-279.4	259.2	-299.6	259.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00	
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00
OPER	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00	
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00
OPER	2F1	66.32 R	51.01	195.00	0.0	0.00	0.00	0.00	
		-19.68 L	-15.14	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.90 R	65.30	195.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.78	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.07 R	70.06	199.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.59	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.97 R	64.59	197.00	0.0	0.00	0.00	0.00	
		-33.83 L	-26.02	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	5.95	1.60	5.95	HS 32.07	57.7
HS20	2.67	9.92	2.67	9.92	HS 53.45	96.2
2F1	3.91	15.22	3.91	15.22	0.00	58.6
3F1	3.05	10.58	3.05	10.58	0.00	70.2
4F1	2.85	9.77	2.85	9.77	0.00	76.9

5C1 3.09 8.85 3.09 8.85 0.00 123.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.7	21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50			
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00		0.00	
OPER	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50			
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00		0.00	
OPER	2F1	67.40 L	51.85	177.50	0.0	0.00	0.00	0.00		0.00	
		-14.62 L	-11.24	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	90.13 R	69.33	197.50	0.0	0.00	0.00	0.00		0.00	
		-21.03 L	-16.17	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	94.15 R	72.42	201.50	0.0	0.00	0.00	0.00		0.00	
		-22.77 L	-17.52	152.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	86.30 R	66.39	238.50	0.0	0.00	0.00	0.00		0.00	
		-32.71 L	-25.16	156.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.81	1.56	8.66	HS 31.11	56.0
HS20	2.93	13.01	2.59	14.44	HS 51.85	93.3
2F1	4.12	19.97	3.64	22.16	0.00	54.6
3F1	3.08	13.88	2.72	15.40	0.00	62.6
4F1	2.95	12.82	2.61	14.22	0.00	70.4
5C1	3.21	8.92	2.84	9.90	0.00	113.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.09	10.09	-12.03	12.11	-9.26	9.32
OPER	HS20	-13.12	13.12	-10.09	10.09	-12.03	12.11	-9.26	9.32
OPER	2F1	-7.98	7.97	-6.14	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-10.01	10.00	-7.70	7.69	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.95	10.98	-8.42	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.33	5.31	HS 106.26	191.3
HS20	8.88	8.85	HS 177.10	318.8
2F1	14.61	14.57	0.00	218.6
3F1	11.65	11.62	0.00	267.2
4F1	12.47	12.45	0.00	336.0
5C1	10.64	10.58	0.00	423.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00
OPER	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00
OPER	2F1	67.40 L	51.85	177.50	0.0	0.00	0.00	0.00
		-14.62 L	-11.24	157.50	0.0	0.00	0.00	0.00
OPER	3F1	90.13 R	69.33	197.50	0.0	0.00	0.00	0.00
		-21.03 L	-16.17	155.00	0.0	0.00	0.00	0.00
OPER	4F1	94.15 R	72.42	201.50	0.0	0.00	0.00	0.00
		-22.77 L	-17.52	152.00	0.0	0.00	0.00	0.00
OPER	5C1	86.30 R	66.39	238.50	0.0	0.00	0.00	0.00
		-32.71 L	-25.16	156.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	8.10	1.62	8.10	HS 32.47	58.5
HS20	2.71	13.49	2.71	13.49	HS 54.12	97.4
2F1	3.80	20.70	3.80	20.70	0.00	57.0
3F1	2.84	14.39	2.84	14.39	0.00	65.4
4F1	2.72	13.29	2.72	13.29	0.00	73.5

5C1	2.97	9.25	2.97	9.25	0.00	118.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00			
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00		
OPER	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00			
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00		
OPER	2F1	66.30 L	51.00	180.00	0.0	0.00	0.00	0.00			
		-19.59 R	-15.07	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.87 L	65.29	180.00	0.0	0.00	0.00	0.00			
		-28.19 R	-21.68	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.05 L	70.04	176.00	0.0	0.00	0.00	0.00			
		-30.53 R	-23.49	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.00 L	64.62	178.00	0.0	0.00	0.00	0.00			
		-33.75 R	-25.96	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.73	5.81	1.53	6.45	HS 30.66	55.2
HS20	2.88	9.68	2.56	10.75	HS 51.10	92.0
2F1	4.22	14.78	3.74	16.41	0.00	56.0
3F1	3.30	10.27	2.92	11.41	0.00	67.1
4F1	3.07	9.48	2.72	10.53	0.00	73.5
5C1	3.33	8.58	2.95	9.53	0.00	118.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.90	6.90	-14.97	9.31	-11.51	7.16
OPER	HS20	-16.78	8.97	-12.90	6.90	-14.97	9.31	-11.51	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.38	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.48	5.81	-10.37	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.70	-10.35	6.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.62	HS 81.85	147.3
HS20	6.82	12.70	HS 136.42	245.5
2F1	11.00	20.83	0.00	165.0
3F1	8.48	17.44	0.00	195.1
4F1	8.49	20.38	0.00	229.2
5C1	8.51	13.60	0.00	340.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.2	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
OPER 300.3	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00	
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00
OPER	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00	
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00
OPER	2F1	66.30 L	51.00	180.00	0.0	0.00	0.00	0.00	
		-19.59 R	-15.07	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.87 L	65.29	180.00	0.0	0.00	0.00	0.00	
		-28.19 R	-21.68	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.05 L	70.04	176.00	0.0	0.00	0.00	0.00	
		-30.53 R	-23.49	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.00 L	64.62	178.00	0.0	0.00	0.00	0.00	
		-33.75 R	-25.96	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	6.02	1.60	6.02	HS 31.99	57.6
HS20	2.67	10.04	2.67	10.04	HS 53.31	96.0
2F1	3.90	15.33	3.90	15.33	0.00	58.5
3F1	3.05	10.65	3.05	10.65	0.00	70.0
4F1	2.84	9.84	2.84	9.84	0.00	76.7

5C1 3.08 8.90 3.08 8.90 0.00 123.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50			
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00		
OPER	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50			
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00		
OPER	2F1	56.46 L	43.43	182.50	0.0	0.00	0.00	0.00			
		-24.64 R	-18.95	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.74 L	55.18	178.50	0.0	0.00	0.00	0.00			
		-35.44 R	-27.26	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.68 L	56.68	178.50	0.0	0.00	0.00	0.00			
		-38.39 R	-29.53	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.92 R	56.09	239.50	0.0	0.00	0.00	0.00			
		-36.19 R	-27.84	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.50	1.77	5.01	HS 35.43	63.8
HS20	3.32	7.50	2.95	8.35	HS 59.06	106.3
2F1	5.09	11.45	4.52	12.75	0.00	67.8
3F1	4.00	7.96	3.56	8.86	0.00	81.8
4F1	3.90	7.35	3.46	8.18	0.00	93.5
5C1	3.94	7.79	3.50	8.68	0.00	140.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.2
OPER	151.3	-112.4	120.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.74	-13.81	5.19
OPER	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.74	-13.81	5.19
OPER	2F1	-12.86	3.61	-9.89	2.77	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.51	3.15	-13.47	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.28	10.71	HS 65.54	118.0
HS20	5.46	17.85	HS 109.23	196.6
2F1	8.73	33.38	0.00	131.0
3F1	6.56	30.66	0.00	150.9
4F1	6.42	38.26	0.00	173.3
5C1	6.81	18.21	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50	
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00
OPER	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50	
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00
OPER	2F1	56.46 L	43.43	182.50	0.0	0.00	0.00	0.00	
		-24.64 R	-18.95	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.74 L	55.18	178.50	0.0	0.00	0.00	0.00	
		-35.44 R	-27.26	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.68 L	56.68	178.50	0.0	0.00	0.00	0.00	
		-38.39 R	-29.53	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.92 R	56.09	239.50	0.0	0.00	0.00	0.00	
		-36.19 R	-27.84	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.85	4.67	1.85	4.67	HS 36.93	66.5
HS20	3.08	7.79	3.08	7.79	HS 61.54	110.8
2F1	4.71	11.89	4.71	11.89	0.00	70.7
3F1	3.71	8.26	3.71	8.26	0.00	85.3
4F1	3.61	7.63	3.61	7.63	0.00	97.5

5C1 3.65 8.09 3.65 8.09 0.00 145.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	179.9	-161.7	160.7	-180.9
OPER	300.6C	-268.7	268.7	-300.6C	299.8	-269.5	267.8	-301.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00			
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50		
OPER	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00			
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50		
OPER	2F1	38.35 L	29.50	185.00	0.0	0.00	0.00	0.00			
		-29.68 R	-22.83	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.76 L	35.97	181.00	0.0	0.00	0.00	0.00			
		-42.69 R	-32.84	220.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	43.07 L	33.13	181.00	0.0	0.00	0.00	0.00			
		-46.24 R	-35.57	223.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	55.19 R	42.45	242.00	0.0	0.00	0.00	0.00			
		-40.08 R	-30.83	222.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.03	3.57	2.71	3.99	HS 54.14	97.5
HS20	5.05	5.95	4.51	6.65	HS 90.24	162.4
2F1	7.82	9.08	6.99	10.16	0.00	104.8
3F1	6.41	6.31	5.73	7.06	0.00	131.7
4F1	6.96	5.83	6.22	6.52	0.00	157.3
5C1	5.43	6.72	4.85	7.52	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.5
OPER	151.3	-110.3	122.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.91	4.47	-16.08	3.44
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.91	4.47	-16.08	3.44
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.77	2.92	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.61	16.44	HS 52.10	93.8
HS20	4.34	27.40	HS 86.84	156.3
2F1	7.23	60.42	0.00	108.5
3F1	5.31	42.00	0.00	122.1
4F1	5.18	38.92	0.00	139.7
5C1	5.60	25.77	0.00	224.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.2	-168.1	167.2	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00	
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50
OPER	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00	
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50
OPER	2F1	38.35 L	29.50	185.00	0.0	0.00	0.00	0.00	
		-29.68 R	-22.83	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.76 L	35.97	181.00	0.0	0.00	0.00	0.00	
		-42.69 R	-32.84	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.07 L	33.13	181.00	0.0	0.00	0.00	0.00	
		-46.24 R	-35.57	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.19 R	42.45	242.00	0.0	0.00	0.00	0.00	
		-40.08 R	-30.83	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.82	3.71	2.82	3.71	HS 56.31	101.4
HS20	4.69	6.18	4.69	6.18	HS 93.86	168.9
2F1	7.26	9.44	7.26	9.44	0.00	109.0
3F1	5.96	6.56	5.96	6.56	0.00	137.0
4F1	6.47	6.06	6.47	6.06	0.00	163.6

5C1

5.05

6.99

5.05

6.99

0.00

201.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50			
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50		
OPER	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50			
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50		
OPER	2F1	13.45 L	10.34	187.50	0.0	0.00	0.00	0.00			
		-34.72 R	-26.71	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.11 R	11.62	245.00	0.0	0.00	0.00	0.00			
		-49.95 R	-38.42	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.17 R	12.44	249.00	0.0	0.00	0.00	0.00			
		-54.10 R	-41.61	223.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.33 R	22.56	244.50	0.0	0.00	0.00	0.00			
		-46.56 R	-35.81	224.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.46	2.57	6.71	2.90	HS 51.46	92.6
HS20	12.44	4.29	11.19	4.83	HS 85.76	154.4
2F1	23.62	7.25	21.24	8.17	0.00	108.7
3F1	21.02	5.04	18.91	5.68	0.00	115.9
4F1	19.65	4.65	17.67	5.24	0.00	125.6
5C1	10.83	5.41	9.74	6.09	0.00	216.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.7
OPER	151.3	-108.2	124.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.71	3.23	-18.24	2.48
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.71	3.23	-18.24	2.48
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.92	-18.67	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	3.17	-17.60	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.16	23.15	HS 43.12	77.6
HS20	3.59	38.58	HS 71.86	129.4
2F1	6.19	61.44	0.00	92.9
3F1	4.46	42.71	0.00	102.6
4F1	4.30	39.43	0.00	116.1
5C1	4.73	39.35	0.00	189.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 8.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50	
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50
OPER	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50	
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50
OPER	2F1	13.45 L	10.34	187.50	0.0	0.00	0.00	0.00	
		-34.72 R	-26.71	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.11 R	11.62	245.00	0.0	0.00	0.00	0.00	
		-49.95 R	-38.42	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.17 R	12.44	249.00	0.0	0.00	0.00	0.00	
		-54.10 R	-41.61	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.33 R	22.56	244.50	0.0	0.00	0.00	0.00	
		-46.56 R	-35.81	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.96	2.68	6.96	2.68	HS 53.65	96.6
HS20	11.61	4.47	11.61	4.47	HS 89.42	161.0
2F1	22.04	7.56	22.04	7.56	0.00	113.4
3F1	19.62	5.25	19.62	5.25	0.00	120.8
4F1	18.33	4.85	18.33	4.85	0.00	131.0

5C1 10.10 5.64 10.10 5.64 0.00 225.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00			
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00			
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00			
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00			
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.48	-23.17	26.52	-23.71	26.11	-18.24	20.08
OPER	HS20	-30.12	34.48	-23.17	26.52	-23.71	26.11	-18.24	20.08
OPER	2F1	-17.48	19.43	-13.45	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.44	-18.67	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.01	-19.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	25.93	-17.60	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.07	3.09	HS 61.49	110.7
2F1	5.46	5.48	0.00	81.9
3F1	3.86	3.88	0.00	88.9
4F1	3.65	3.67	0.00	98.7
5C1	4.10	4.11	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00	
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00	
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00	
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00			
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00			
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00			
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00			
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-9.5	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.48	-26.56	26.52	-26.28	26.11	-20.22	20.08
OPER	HS20	-34.53	34.48	-26.56	26.52	-26.28	26.11	-20.22	20.08
OPER	2F1	-19.45	19.43	-14.96	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.44	-21.13	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.01	-22.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-25.91	25.93	-19.93	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.07	3.09	HS 61.49	110.7
2F1	5.46	5.48	0.00	81.9
3F1	3.86	3.88	0.00	88.9
4F1	3.65	3.67	0.00	98.7
5C1	4.10	4.11	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00	
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00	
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00	
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50			
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50		
OPER	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50			
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50		
OPER	2F1	13.55 R	10.42	212.50	0.0	0.00	0.00	0.00			
		-34.91 L	-26.86	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.46 L	10.35	155.00	0.0	0.00	0.00	0.00			
		-50.23 L	-38.64	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.37 L	11.05	151.00	0.0	0.00	0.00	0.00			
		-54.40 L	-41.85	177.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	28.23 L	21.71	155.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.97	175.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.39	2.55	6.64	2.87	HS 50.98	91.8
HS20	12.31	4.25	11.07	4.79	HS 84.96	152.9
2F1	23.52	7.18	21.16	8.10	0.00	107.7
3F1	23.68	4.99	21.30	5.63	0.00	114.8
4F1	22.18	4.61	19.95	5.20	0.00	124.4
5C1	11.29	5.36	10.16	6.04	0.00	214.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.6	0.0	7.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-74.5	65.2
OPER	151.3	-124.1	108.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	2F1	-2.28	17.46	-1.75	13.43	0.00	0.00	0.00	0.00
OPER	3F1	-3.28	24.22	-2.52	18.63	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	25.11	-2.71	19.31	0.00	0.00	0.00	0.00
OPER	5C1	-3.50	22.87	-2.69	17.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.46	2.17	HS 43.36	78.1
HS20	34.09	3.61	HS 72.27	130.1
2F1	54.52	6.22	0.00	93.3
3F1	37.90	4.48	0.00	103.1
4F1	35.19	4.33	0.00	116.8
5C1	35.46	4.75	0.00	190.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.8	160.4	-174.8	160.4	-174.8	178.4	-156.8	178.4	-
OPER 261.4	279.4	-279.4	279.4	-279.4	297.4	-261.4	297.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50	
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50
OPER	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50	
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50
OPER	2F1	13.55 R	10.42	212.50	0.0	0.00	0.00	0.00	
		-34.91 L	-26.86	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.46 L	10.35	155.00	0.0	0.00	0.00	0.00	
		-50.23 L	-38.64	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.37 L	11.05	151.00	0.0	0.00	0.00	0.00	
		-54.40 L	-41.85	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.23 L	21.71	155.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.97	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.89	2.66	6.89	2.66	HS 53.16	95.7
HS20	11.49	4.43	11.49	4.43	HS 88.61	159.5
2F1	21.95	7.49	21.95	7.49	0.00	112.3
3F1	22.10	5.20	22.10	5.20	0.00	119.7
4F1	20.70	4.80	20.70	4.80	0.00	129.7

5C1	10.54	5.59	10.54	5.59	0.00	223.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00			
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00		
OPER	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00			
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00		
OPER	2F1	38.40 R	29.54	215.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.84 R	36.03	219.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	43.14 R	33.19	219.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	177.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	54.41 L	41.85	158.00	0.0	0.00	0.00	0.00			
		-40.26 L	-30.97	178.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.46	98.0
HS20	5.08	5.84	4.54	6.54	HS 90.77	163.4
2F1	7.86	8.97	7.03	10.04	0.00	105.4
3F1	6.45	6.23	5.76	6.98	0.00	132.5
4F1	7.00	5.76	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	25.34	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	HS20	-3.64	25.34	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	2F1	-2.28	15.22	-1.75	11.71	0.00	0.00	0.00	0.00
OPER	3F1	-3.28	20.71	-2.52	15.93	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	21.27	-2.71	16.36	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	19.65	-4.06	15.12	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.14	2.62	HS 52.43	94.4
HS20	26.90	4.37	HS 87.38	157.3
2F1	53.61	7.27	0.00	109.1
3F1	37.27	5.34	0.00	122.9
4F1	34.60	5.20	0.00	140.5
5C1	23.13	5.63	0.00	225.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00	
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00
OPER	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00	
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00
OPER	2F1	38.40 R	29.54	215.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.84 R	36.03	219.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.14 R	33.19	219.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.41 L	41.85	158.00	0.0	0.00	0.00	0.00	
		-40.26 L	-30.97	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.83	3.65	2.83	3.65	HS 56.63	101.9
HS20	4.72	6.08	4.72	6.08	HS 94.38	169.9
2F1	7.31	9.33	7.31	9.33	0.00	109.6
3F1	5.99	6.48	5.99	6.48	0.00	137.8
4F1	6.50	5.99	6.50	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.4	154.9	-186.6
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50			
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00		
OPER	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50			
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00		
OPER	2F1	56.41 R	43.39	217.50	0.0	0.00	0.00	0.00			
		-24.73 L	-19.02	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.67 R	55.13	221.50	0.0	0.00	0.00	0.00			
		-35.57 L	-27.36	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.62 R	56.63	221.50	0.0	0.00	0.00	0.00			
		-38.53 L	-29.64	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.30 L	55.62	160.50	0.0	0.00	0.00	0.00			
		-36.39 L	-28.00	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	2.02	4.41	1.80	4.92	HS 35.96	64.7
HS20	3.37	7.36	3.00	8.20	HS 59.94	107.9
2F1	5.14	11.29	4.58	12.58	0.00	68.7
3F1	4.05	7.84	3.60	8.74	0.00	82.9
4F1	3.94	7.24	3.51	8.07	0.00	94.7
5C1	4.01	7.67	3.57	8.55	0.00	142.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

9.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-120.0	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	2F1	-3.63	12.82	-2.79	9.86	0.00	0.00	0.00	0.00
OPER	3F1	-3.95	17.07	-3.04	13.13	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	17.45	-2.71	13.42	0.00	0.00	0.00	0.00
OPER	5C1	-7.30	16.45	-5.61	12.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.55	3.30	HS 65.98	118.8
HS20	17.59	5.50	HS 109.97	197.9
2F1	33.09	8.79	0.00	131.9
3F1	30.40	6.61	0.00	152.0
4F1	34.01	6.46	0.00	174.5
5C1	16.45	6.85	0.00	274.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.8	279.4	-279.4	279.4	-279.4	269.0	-289.8	269.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.17 R	66.29	235.50	0.0	64.63	207.50	
		-37.94 L	-29.19	167.00	0.0	-30.08	190.00	0.00
OPER	HS20	86.17 R	66.29	235.50	0.0	64.63	207.50	
		-37.94 L	-29.19	167.00	0.0	-30.08	190.00	0.00
OPER	2F1	56.41 R	43.39	217.50	0.0	0.00	0.00	0.00
		-24.73 L	-19.02	182.50	0.0	0.00	0.00	0.00
OPER	3F1	71.67 R	55.13	221.50	0.0	0.00	0.00	0.00
		-35.57 L	-27.36	180.00	0.0	0.00	0.00	0.00
OPER	4F1	73.62 R	56.63	221.50	0.0	0.00	0.00	0.00
		-38.53 L	-29.64	177.00	0.0	0.00	0.00	0.00
OPER	5C1	72.30 L	55.62	160.50	0.0	0.00	0.00	0.00
		-36.39 L	-28.00	179.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.58	1.87	4.58	HS 37.46	67.4
HS20	3.12	7.64	3.12	7.64	HS 62.43	112.4
2F1	4.77	11.72	4.77	11.72	0.00	71.5
3F1	3.75	8.15	3.75	8.15	0.00	86.3
4F1	3.65	7.52	3.65	7.52	0.00	98.6

5C1	3.72	7.96	3.72	7.96	0.00	148.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.3	-171.3	151.1	-190.5
OPER	300.6C	-268.7	268.7	-300.6C	283.8	-285.5	251.8	-317.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00			
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00		
OPER	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00			
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00		
OPER	2F1	66.15 R	50.88	220.00	0.0	0.00	0.00	0.00			
		-19.63 L	-15.10	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.67 R	65.13	220.00	0.0	0.00	0.00	0.00			
		-28.25 L	-21.73	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.83 R	69.87	224.00	0.0	0.00	0.00	0.00			
		-30.59 L	-23.53	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.76 R	64.43	222.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	180.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	5.69	1.57	6.32	HS 31.38	56.5
HS20	2.95	9.48	2.62	10.54	HS 52.29	94.1
2F1	4.29	14.54	3.81	16.17	0.00	57.1
3F1	3.35	10.11	2.97	11.24	0.00	68.4
4F1	3.12	9.33	2.77	10.38	0.00	74.8
5C1	3.39	8.37	3.01	9.31	0.00	120.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.5
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Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-70.8 68.9
OPER	151.3	-117.9 114.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.		w/imp.	w/o imp.			
		(-) (+)	(-) (+)		(-) (+)	(-) (+)			
INV.	HS20	-9.12 16.75	-7.02 12.88		-9.40 14.76	-7.23 11.35			
OPER	HS20	-9.12 16.75	-7.02 12.88		-9.40 14.76	-7.23 11.35			
OPER	2F1	-5.71 10.36	-4.39 7.97		0.00 0.00	0.00 0.00			
OPER	3F1	-6.82 13.43	-5.25 10.33		0.00 0.00	0.00 0.00			
OPER	4F1	-5.83 13.41	-4.49 10.32		0.00 0.00	0.00 0.00			
OPER	5C1	-9.45 13.40	-7.27 10.31		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	7.52	4.11	HS 82.27	148.1
HS20	12.54	6.86	HS 137.11	246.8
2F1	20.66	11.08	0.00	166.2
3F1	17.29	8.55	0.00	196.6
4F1	20.21	8.56	0.00	231.2
5C1	12.48	8.57	0.00	342.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.8	174.4	-160.9	174.4	-160.9	157.5	-177.8	157.5	-
OPER 296.3	279.4	-279.4	279.4	-279.4	262.5	-296.3	262.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00	
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00
OPER	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00	
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00
OPER	2F1	66.15 R	50.88	220.00	0.0	0.00	0.00	0.00	
		-19.63 L	-15.10	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.67 R	65.13	220.00	0.0	0.00	0.00	0.00	
		-28.25 L	-21.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.83 R	69.87	224.00	0.0	0.00	0.00	0.00	
		-30.59 L	-23.53	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.76 R	64.43	222.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.64	5.90	1.64	5.90	HS 32.72	58.9
HS20	2.73	9.83	2.73	9.83	HS 54.53	98.1
2F1	3.97	15.09	3.97	15.09	0.00	59.5
3F1	3.10	10.49	3.10	10.49	0.00	71.3
4F1	2.89	9.68	2.89	9.68	0.00	78.0

5C1

3.13

8.68

3.13

8.68

0.00

125.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.2
 Superimposed Dead Load Moment 17.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50			
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00	0.00		
OPER	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50			
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00	0.00		
OPER	2F1	67.18 L	51.67	202.50	0.0	0.00	0.00	0.00			
		-16.43 R	-12.64	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.77 R	69.05	222.50	0.0	0.00	0.00	0.00			
		-23.64 R	-18.18	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.76 L	72.12	198.50	0.0	0.00	0.00	0.00			
		-25.55 R	-19.65	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.68 L	65.90	161.50	0.0	0.00	0.00	0.00			
		-34.40 R	-26.46	243.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	6.30	1.59	7.01	HS 31.86	57.3
HS20	2.99	10.51	2.65	11.68	HS 53.10	95.6
2F1	4.20	17.45	3.73	19.40	0.00	55.9
3F1	3.15	12.13	2.79	13.49	0.00	64.2
4F1	3.01	11.22	2.67	12.48	0.00	72.1
5C1	3.30	8.34	2.92	9.27	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

9.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-0.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.5	70.1
OPER	151.3	-115.8	116.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	2F1	-8.01	7.94	-6.16	6.11	0.00	0.00	0.00	0.00
OPER	3F1	-10.05	9.95	-7.73	7.65	0.00	0.00	0.00	0.00
OPER	4F1	-9.40	9.28	-7.23	7.14	0.00	0.00	0.00	0.00
OPER	5C1	-11.66	10.93	-8.97	8.41	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.23	5.36	HS 104.60	188.3
HS20	8.72	8.94	HS 174.34	313.8
2F1	14.46	14.73	0.00	216.9
3F1	11.53	11.75	0.00	265.2
4F1	12.33	12.60	0.00	332.9
5C1	9.93	10.69	0.00	397.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 17.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00
OPER	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00
OPER	2F1	67.18 L	51.67	202.50	0.0	0.00	0.00	0.00
		-16.43 R	-12.64	242.50	0.0	0.00	0.00	0.00
OPER	3F1	89.77 R	69.05	222.50	0.0	0.00	0.00	0.00
		-23.64 R	-18.18	245.00	0.0	0.00	0.00	0.00
OPER	4F1	93.76 L	72.12	198.50	0.0	0.00	0.00	0.00
		-25.55 R	-19.65	248.00	0.0	0.00	0.00	0.00
OPER	5C1	85.68 L	65.90	161.50	0.0	0.00	0.00	0.00
		-34.40 R	-26.46	243.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.66	6.54	1.66	6.54	HS 33.23	59.8
HS20	2.77	10.90	2.77	10.90	HS 55.38	99.7
2F1	3.89	18.11	3.89	18.11	0.00	58.3
3F1	2.91	12.59	2.91	12.59	0.00	66.9
4F1	2.79	11.65	2.79	11.65	0.00	75.2

5C1 3.05 8.65 3.05 8.65 0.00 122.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.600 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.9	-169.6	152.7	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.5	-282.7	254.6	-314.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00			
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00		
OPER	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00			
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00		
OPER	2F1	65.95 L	50.73	205.00	0.0	0.00	0.00	0.00			
		-22.12 R	-17.02	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.33 L	64.87	205.00	0.0	0.00	0.00	0.00			
		-31.82 R	-24.48	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.47 L	69.60	201.00	0.0	0.00	0.00	0.00			
		-34.40 R	-26.46	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.03 L	62.33	203.00	0.0	0.00	0.00	0.00			
		-36.33 R	-27.95	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.62	1.58	5.14	HS 31.66	57.0
HS20	2.97	7.69	2.64	8.56	HS 52.76	95.0
2F1	4.34	12.78	3.86	14.23	0.00	57.9
3F1	3.40	8.89	3.02	9.89	0.00	69.4
4F1	3.17	8.22	2.81	9.15	0.00	76.0
5C1	3.54	7.78	3.14	8.66	0.00	125.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-2.4	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.2	71.4
OPER	151.3	-113.7	119.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	2F1	-10.44	5.65	-8.03	4.35	0.00	0.00	0.00	0.00
OPER	3F1	-13.54	6.72	-10.42	5.17	0.00	0.00	0.00	0.00
OPER	4F1	-13.53	5.68	-10.41	4.37	0.00	0.00	0.00	0.00
OPER	5C1	-13.88	8.66	-10.68	6.66	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.02	7.91	HS 80.32	144.6
HS20	6.69	13.19	HS 133.87	241.0
2F1	10.89	21.07	0.00	163.4
3F1	8.40	17.71	0.00	193.2
4F1	8.40	20.94	0.00	226.9
5C1	8.19	13.74	0.00	327.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.600 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.1	173.3	-162.0	173.3	-162.0	159.2	-176.1	159.2	-
OPER 293.5	279.4	-279.4	279.4	-279.4	265.3	-293.5	265.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00	
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00
OPER	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00	
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00
OPER	2F1	65.95 L	50.73	205.00	0.0	0.00	0.00	0.00	
		-22.12 R	-17.02	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.33 L	64.87	205.00	0.0	0.00	0.00	0.00	
		-31.82 R	-24.48	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.47 L	69.60	201.00	0.0	0.00	0.00	0.00	
		-34.40 R	-26.46	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.03 L	62.33	203.00	0.0	0.00	0.00	0.00	
		-36.33 R	-27.95	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.65	4.79	1.65	4.79	HS 32.99	59.4
HS20	2.75	7.99	2.75	7.99	HS 54.99	99.0
2F1	4.02	13.27	4.02	13.27	0.00	60.3
3F1	3.15	9.22	3.15	9.22	0.00	72.4
4F1	2.93	8.53	2.93	8.53	0.00	79.2

5C1	3.27	8.08	3.27	8.08	0.00	131.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50			
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00		
OPER	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50			
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00		
OPER	2F1	55.98 L	43.07	207.50	0.0	0.00	0.00	0.00			
		-27.82 R	-21.40	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.07 L	54.67	203.50	0.0	0.00	0.00	0.00			
		-40.01 R	-30.78	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	72.96 L	56.13	203.50	0.0	0.00	0.00	0.00			
		-43.25 R	-33.27	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	66.81 L	51.39	201.50	0.0	0.00	0.00	0.00			
		-39.84 R	-30.64	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.07	3.55	1.85	3.97	HS 36.92	66.5
HS20	3.45	5.92	3.08	6.61	HS 61.54	110.8
2F1	5.28	9.83	4.71	10.98	0.00	70.7
3F1	4.16	6.84	3.71	7.64	0.00	85.4
4F1	4.05	6.32	3.62	7.06	0.00	97.6
5C1	4.43	6.87	3.95	7.67	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-4.3	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.7
OPER	151.3	-111.6	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	2F1	-12.90	3.57	-9.92	2.75	0.00	0.00	0.00	0.00
OPER	3F1	-17.18	3.84	-13.21	2.95	0.00	0.00	0.00	0.00
OPER	4F1	-17.57	3.16	-13.51	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.82	6.58	-12.94	5.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.24	11.25	HS 64.84	116.7
HS20	5.40	18.75	HS 108.06	194.5
2F1	8.65	33.88	0.00	129.8
3F1	6.50	31.57	0.00	149.5
4F1	6.36	38.29	0.00	171.6
5C1	6.64	18.41	0.00	265.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.6	169.6	-165.7	169.6	-165.7	164.7	-170.6	164.7	-
OPER 284.3	279.4	-279.4	279.4	-279.4	274.5	-284.3	274.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50	
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00
OPER	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50	
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00
OPER	2F1	55.98 L	43.07	207.50	0.0	0.00	0.00	0.00	
		-27.82 R	-21.40	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.07 L	54.67	203.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.78	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.96 L	56.13	203.50	0.0	0.00	0.00	0.00	
		-43.25 R	-33.27	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.81 L	51.39	201.50	0.0	0.00	0.00	0.00	
		-39.84 R	-30.64	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.92	3.69	1.92	3.69	HS 38.43	69.2
HS20	3.20	6.15	3.20	6.15	HS 64.04	115.3
2F1	4.90	10.22	4.90	10.22	0.00	73.6
3F1	3.86	7.11	3.86	7.11	0.00	88.8
4F1	3.76	6.57	3.76	6.57	0.00	101.6

5C1	4.11	7.14	4.11	7.14	0.00	164.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	186.1	-155.5	166.9	-174.7
OPER	300.6C	-268.7	268.7	-300.6C	310.2	-259.1	278.2	-291.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00			
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00		202.50	
OPER	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00			
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00		202.50	
OPER	2F1	37.81 L	29.08	210.00	0.0	0.00	0.00	0.00		0.00	
		-33.51 R	-25.77	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	45.95 L	35.35	206.00	0.0	0.00	0.00	0.00		0.00	
		-48.20 R	-37.08	245.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	42.32 L	32.55	206.00	0.0	0.00	0.00	0.00		0.00	
		-52.10 R	-40.08	248.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	46.42 L	35.71	169.00	0.0	0.00	0.00	0.00		0.00	
		-44.85 R	-34.50	247.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.18	2.79	2.85	3.14	HS 55.86	100.6
HS20	5.30	4.66	4.76	5.23	HS 93.10	167.6
2F1	8.20	7.73	7.36	8.69	0.00	110.4
3F1	6.75	5.38	6.05	6.04	0.00	123.7
4F1	7.33	4.97	6.57	5.59	0.00	134.3
5C1	6.68	5.78	5.99	6.49	0.00	231.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.5	-6.3	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.22
OPER	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.22
OPER	2F1	-15.29	2.04	-11.76	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-20.82	2.93	-16.02	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.40	3.16	-16.46	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-20.12	4.74	-15.48	3.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.58	17.63	HS 51.52	92.7
HS20	4.29	29.38	HS 85.87	154.6
2F1	7.17	60.46	0.00	107.5
3F1	5.26	42.02	0.00	121.0
4F1	5.12	38.94	0.00	138.3
5C1	5.45	25.99	0.00	217.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 161.9	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
OPER 269.9	279.4	-279.4	279.4	-279.4	288.9	-269.9	288.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00	
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50
OPER	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00	
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50
OPER	2F1	37.81 L	29.08	210.00	0.0	0.00	0.00	0.00	
		-33.51 R	-25.77	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.95 L	35.35	206.00	0.0	0.00	0.00	0.00	
		-48.20 R	-37.08	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.32 L	32.55	206.00	0.0	0.00	0.00	0.00	
		-52.10 R	-40.08	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.42 L	35.71	169.00	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.96	2.91	2.96	2.91	HS 58.18	104.7
HS20	4.94	4.85	4.94	4.85	HS 96.96	174.5
2F1	7.64	8.05	7.64	8.05	0.00	114.6
3F1	6.29	5.60	6.29	5.60	0.00	128.8
4F1	6.83	5.18	6.83	5.18	0.00	139.8

5C1	6.22	6.02	6.22	6.02	0.00	240.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.6 -26.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	197.8	-143.7	178.6	-162.9
OPER	300.6C	-268.7	268.7	-300.6C	329.7	-239.6	297.7	-271.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50			
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50		
OPER	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50			
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50		
OPER	2F1	12.95 L	9.96	212.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-39.20 R	-30.15	242.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	9.59 L	7.38	208.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-56.39 R	-43.37	245.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	8.95 L	6.89	176.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-60.96 R	-46.89	248.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	21.51 L	16.55	171.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-55.01 R	-42.32	253.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.39	2.12	8.48	2.40	HS 42.32	76.2
HS20	15.65	3.53	14.13	4.00	HS 70.53	127.0
2F1	25.47	6.11	23.00	6.93	0.00	91.7
3F1	34.38	4.25	31.04	4.82	0.00	97.7
4F1	36.82	3.93	33.25	4.45	0.00	106.1
5C1	15.33	4.36	13.84	4.94	0.00	174.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.7	-8.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.5	75.1
OPER	151.3	-107.5	125.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.30
OPER	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.30
OPER	2F1	-17.51	2.04	-13.47	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	2.93	-18.70	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	3.17	-19.40	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	3.16	-18.10	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.13	24.04	HS 42.63	76.7
HS20	3.55	40.06	HS 71.06	127.9
2F1	6.14	61.47	0.00	92.1
3F1	4.42	42.73	0.00	101.7
4F1	4.26	39.45	0.00	115.1
5C1	4.57	39.59	0.00	182.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 9.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.6 -26.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 150.2	156.0	-179.3	156.0	-179.3	185.1	-150.2	185.1	-
OPER 250.3	279.4	-279.4	279.4	-279.4	308.5	-250.3	308.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00
OPER	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00
OPER	2F1	12.95 L	9.96	212.50	0.0	0.00	0.00	0.00
		-39.20 R	-30.15	242.50	0.0	0.00	0.00	0.00
OPER	3F1	9.59 L	7.38	208.50	0.0	0.00	0.00	0.00
		-56.39 R	-43.37	245.00	0.0	0.00	0.00	0.00
OPER	4F1	8.95 L	6.89	176.00	0.0	0.00	0.00	0.00
		-60.96 R	-46.89	248.00	0.0	0.00	0.00	0.00
OPER	5C1	21.51 L	16.55	171.50	0.0	0.00	0.00	0.00
		-55.01 R	-42.32	253.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.79	2.21	8.79	2.21	HS 44.22	79.6
HS20	14.64	3.68	14.64	3.68	HS 73.70	132.7
2F1	23.83	6.39	23.83	6.39	0.00	95.8
3F1	32.16	4.44	32.16	4.44	0.00	102.1
4F1	34.45	4.11	34.45	4.11	0.00	110.9

5C1	14.34	4.55	14.34	4.55	0.00	182.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00		
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00		
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00			
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00			
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00			
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00			
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	14.80	1.25	11.54	1.78	HS 24.96	44.9
HS20	24.67	2.08	19.24	2.96	HS 41.59	74.9
2F1	37.85	4.79	29.52	6.81	0.00	71.8
3F1	26.31	3.20	20.52	4.55	0.00	73.5
4F1	24.30	2.65	18.95	3.78	0.00	71.6
5C1	31.77	2.92	24.78	4.16	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-8.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	2F1	-17.51	20.02	-13.47	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	28.68	-18.70	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	30.81	-19.40	23.70	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	27.33	-18.10	21.02	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.82	1.96	HS 36.49	65.7
HS20	3.04	3.26	HS 60.81	109.5
2F1	5.42	5.98	0.00	81.3
3F1	3.83	4.18	0.00	88.2
4F1	3.62	3.89	0.00	97.8
5C1	3.95	4.38	0.00	158.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00	
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00	
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00	
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00	
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.93	1.31	11.93	1.31	HS 26.20	47.2
HS20	19.88	2.18	19.88	2.18	HS 43.67	78.6
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	109.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00		215.00	
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00		215.00	
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00		0.00	
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00		0.00	
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00		0.00	
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00		0.00	
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.80	1.25	11.54	1.78	HS 24.96	44.9
HS20	24.67	2.08	19.24	2.96	HS 41.59	74.9
2F1	37.85	4.79	29.52	6.81	0.00	71.8
3F1	26.31	3.20	20.52	4.55	0.00	73.5
4F1	24.30	2.65	18.95	3.78	0.00	71.6
5C1	31.77	2.92	24.78	4.16	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-10.1	11.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	2F1	-19.46	20.02	-14.97	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-27.50	28.68	-21.16	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-29.10	30.81	-22.38	23.70	0.00	0.00	0.00	0.00
OPER	5C1	-26.68	27.33	-20.52	21.02	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.82	1.96	HS 36.49	65.7
HS20	3.04	3.26	HS 60.81	109.5
2F1	5.42	5.98	0.00	81.3
3F1	3.83	4.18	0.00	88.2
4F1	3.62	3.89	0.00	97.8
5C1	3.95	4.38	0.00	158.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00	
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00	
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00	
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00	
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.93	1.31	11.93	1.31	HS 26.20	47.2
HS20	19.88	2.18	19.88	2.18	HS 43.67	78.6
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	230.7	-176.8	206.5	-200.9
OPER	359.7C	-319.4	319.4	-359.7C	384.5	-294.6	344.2	-334.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50			
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00		
OPER	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50			
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00		
OPER	2F1	13.37 R	10.28	237.50	0.0	0.00	0.00	0.00			
		-36.69 L	-28.22	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.14 L	10.88	180.00	0.0	0.00	0.00	0.00			
		-52.78 L	-40.60	205.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.10 L	11.61	176.00	0.0	0.00	0.00	0.00			
		-57.17 L	-43.97	202.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	29.41 L	22.62	180.50	0.0	0.00	0.00	0.00			
		-52.01 R	-40.01	261.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.59	2.85	8.59	3.24	HS 57.01	102.6
HS20	15.99	4.75	14.31	5.40	HS 95.01	171.0
2F1	28.76	8.03	25.75	9.13	0.00	120.5
3F1	27.18	5.58	24.34	6.34	0.00	128.4
4F1	25.46	5.15	22.80	5.86	0.00	139.2
5C1	13.07	5.66	11.70	6.44	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.9	0.0	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-85.8	73.1
OPER	172.1	-142.9	121.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.64	32.71	-0.49	25.16	-1.34	24.40	-1.03	18.77
OPER	HS20	-0.64	32.71	-0.49	25.16	-1.34	24.40	-1.03	18.77
OPER	2F1	-0.44	18.39	-0.34	14.15	0.00	0.00	0.00	0.00
OPER	3F1	-0.63	25.94	-0.48	19.96	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	27.32	-0.52	21.02	0.00	0.00	0.00	0.00
OPER	5C1	-1.00	24.64	-0.77	18.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.91	2.23	HS 44.69	80.4
HS20	106.52	3.72	HS 74.48	134.1
2F1	327.14	6.62	0.00	99.3
3F1	227.40	4.70	0.00	108.0
4F1	210.74	4.46	0.00	120.4
5C1	143.15	4.94	0.00	197.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.5	189.4	-209.2	189.4	-209.2	214.2	-184.5	214.2	-
OPER 307.4	332.2	-332.2	332.2	-332.2	357.0	-307.4	357.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50	
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00
OPER	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50	
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00
OPER	2F1	13.37 R	10.28	237.50	0.0	0.00	0.00	0.00	
		-36.69 L	-28.22	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.14 L	10.88	180.00	0.0	0.00	0.00	0.00	
		-52.78 L	-40.60	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.10 L	11.61	176.00	0.0	0.00	0.00	0.00	
		-57.17 L	-43.97	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.41 L	22.62	180.50	0.0	0.00	0.00	0.00	
		-52.01 R	-40.01	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.91	2.97	8.91	2.97	HS 59.48	107.1
HS20	14.84	4.96	14.84	4.96	HS 99.13	178.4
2F1	26.70	8.38	26.70	8.38	0.00	125.7
3F1	25.24	5.82	25.24	5.82	0.00	134.0
4F1	23.64	5.38	23.64	5.38	0.00	145.2

5C1	12.14	5.91	12.14	5.91	0.00	236.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.2
OPER	359.7C	-319.4	319.4	-359.7C	360.7	-318.4	320.4	-358.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00			
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00		
OPER	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00			
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00		
OPER	2F1	41.11 R	31.62	240.00	0.0	0.00	0.00	0.00			
		-32.61 L	-25.09	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	50.94 R	39.18	244.00	0.0	0.00	0.00	0.00			
		-46.92 L	-36.09	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.57 R	36.59	248.00	0.0	0.00	0.00	0.00			
		-50.81 L	-39.09	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.56 L	45.05	183.00	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.38	3.82	3.01	4.30	HS 60.11	108.2
HS20	5.64	6.36	5.01	7.17	HS 100.18	180.3
2F1	8.77	9.76	7.79	11.00	0.00	116.9
3F1	7.08	6.79	6.29	7.64	0.00	144.7
4F1	7.58	6.27	6.74	7.06	0.00	169.2
5C1	6.16	7.18	5.47	8.09	0.00	218.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.5	74.3
OPER	172.1	-140.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.97	28.22	-0.75	21.70	-2.83	21.94	-2.18	16.88
OPER	HS20	-0.97	28.22	-0.75	21.70	-2.83	21.94	-2.18	16.88
OPER	2F1	-1.41	16.52	-1.08	12.71	0.00	0.00	0.00	0.00
OPER	3F1	-1.17	22.86	-0.90	17.59	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	23.48	-0.52	18.06	0.00	0.00	0.00	0.00
OPER	5C1	-2.52	21.70	-1.94	16.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	29.87	2.63	HS 52.69	94.8
HS20	49.79	4.39	HS 87.82	158.1
2F1	100.16	7.50	0.00	112.5
3F1	120.64	5.42	0.00	124.6
4F1	207.65	5.28	0.00	142.5
5C1	55.95	5.71	0.00	228.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.7	198.9	-199.7	198.9	-199.7	199.9	-198.7	199.9	-
OPER 331.2	332.2	-332.2	332.2	-332.2	333.2	-331.2	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00	
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00
OPER	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00	
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00
OPER	2F1	41.11 R	31.62	240.00	0.0	0.00	0.00	0.00	
		-32.61 L	-25.09	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	50.94 R	39.18	244.00	0.0	0.00	0.00	0.00	
		-46.92 L	-36.09	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.57 R	36.59	248.00	0.0	0.00	0.00	0.00	
		-50.81 L	-39.09	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.56 L	45.05	183.00	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.12	3.97	3.12	3.97	HS 62.51	112.5
HS20	5.21	6.62	5.21	6.62	HS 104.18	187.5
2F1	8.10	10.16	8.10	10.16	0.00	121.6
3F1	6.54	7.06	6.54	7.06	0.00	150.4
4F1	7.00	6.52	7.00	6.52	0.00	176.0

5C1

5.69

7.47

5.69

7.47

0.00

227.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 10.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.3	-202.2	181.1	-226.4
OPER	359.7C	-319.4	319.4	-359.7C	342.1	-337.0	301.8	-377.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50			
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00		
OPER	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50			
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00		
OPER	2F1	63.30 R	48.69	242.50	0.0	0.00	0.00	0.00			
		-28.54 L	-21.95	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.80 R	62.93	246.50	0.0	0.00	0.00	0.00			
		-41.05 L	-31.58	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.88 R	64.52	246.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.06 L	62.36	185.50	0.0	0.00	0.00	0.00			
		-38.79 L	-29.84	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.06	4.62	1.82	5.17	HS 36.39	65.5
HS20	3.44	7.70	3.03	8.62	HS 60.65	109.2
2F1	5.40	11.81	4.77	13.22	0.00	71.5
3F1	4.18	8.21	3.69	9.19	0.00	84.9
4F1	4.08	7.58	3.60	8.48	0.00	97.2
5C1	4.22	8.69	3.72	9.73	0.00	148.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.2	75.6
OPER	172.1	-138.7	126.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.02	23.31	-2.32	17.93	-4.64	19.35	-3.57	14.88
OPER	HS20	-3.02	23.31	-2.32	17.93	-4.64	19.35	-3.57	14.88
OPER	2F1	-2.84	14.43	-2.19	11.10	0.00	0.00	0.00	0.00
OPER	3F1	-3.08	19.48	-2.37	14.99	0.00	0.00	0.00	0.00
OPER	4F1	-2.26	19.93	-1.74	15.33	0.00	0.00	0.00	0.00
OPER	5C1	-4.29	18.58	-3.30	14.29	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.95	3.24	HS 64.87	116.8
HS20	29.92	5.41	HS 108.12	194.6
2F1	48.81	8.73	0.00	131.0
3F1	44.99	6.47	0.00	148.7
4F1	61.33	6.32	0.00	170.7
5C1	32.31	6.78	0.00	271.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.9	206.4	-192.3	206.4	-192.3	188.8	-209.9	188.8	-
OPER 349.8	332.2	-332.2	332.2	-332.2	314.6	-349.8	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50	
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00
OPER	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50	
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00
OPER	2F1	63.30 R	48.69	242.50	0.0	0.00	0.00	0.00	
		-28.54 L	-21.95	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.80 R	62.93	246.50	0.0	0.00	0.00	0.00	
		-41.05 L	-31.58	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.88 R	64.52	246.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.06 L	62.36	185.50	0.0	0.00	0.00	0.00	
		-38.79 L	-29.84	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.90	4.79	1.90	4.79	HS 37.93	68.3
HS20	3.16	7.99	3.16	7.99	HS 63.22	113.8
2F1	4.97	12.26	4.97	12.26	0.00	74.6
3F1	3.85	8.52	3.85	8.52	0.00	88.5
4F1	3.75	7.87	3.75	7.87	0.00	101.3

5C1 3.88 9.02 3.88 9.02 0.00 155.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.3	-210.2	173.1	-234.4
OPER	359.7C	-319.4	319.4	-359.7C	328.8	-350.3	288.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00			
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00		
OPER	HS20	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00			
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00		
OPER	2F1	77.81 R	59.86	245.00	0.0	0.00	0.00	0.00			
		-24.46 L	-18.82	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	245.00	0.0	0.00	0.00	0.00			
		-35.19 L	-27.07	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.73 R	82.87	249.00	0.0	0.00	0.00	0.00			
		-38.11 L	-29.32	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.63 R	75.87	247.00	0.0	0.00	0.00	0.00			
		-33.25 L	-25.57	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.71	5.60	1.50	6.24	HS 30.06	54.1
HS20	2.86	9.33	2.51	10.41	HS 50.11	90.2
2F1	4.22	14.32	3.71	15.97	0.00	55.6
3F1	3.28	9.95	2.88	11.10	0.00	66.1
4F1	3.05	9.19	2.68	10.25	0.00	72.3
5C1	3.33	10.54	2.92	11.75	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.0	76.9
OPER	172.1	-136.7	128.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.09	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	HS20	-6.09	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	2F1	-4.55	12.15	-3.50	9.34	0.00	0.00	0.00	0.00
OPER	3F1	-5.40	15.85	-4.15	12.20	0.00	0.00	0.00	0.00
OPER	4F1	-4.61	16.26	-3.54	12.51	0.00	0.00	0.00	0.00
OPER	5C1	-6.27	15.75	-4.82	12.11	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.15	4.22	HS 84.48	152.1
HS20	20.25	7.04	HS 140.80	253.4
2F1	30.06	10.54	0.00	158.2
3F1	25.33	8.08	0.00	185.8
4F1	29.66	7.88	0.00	212.7
5C1	21.81	8.14	0.00	325.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 217.9	211.7	-187.0	211.7	-187.0	180.8	-217.9	180.8	-
OPER 363.1	332.2	-332.2	332.2	-332.2	301.3	-363.1	301.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	115.16	R	88.59	263.00	0.0	88.90	68.38	235.00		
		-37.53	L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00	
OPER	HS20	115.16	R	88.59	263.00	0.0	88.90	68.38	235.00		
		-37.53	L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00	
OPER	2F1	77.81	R	59.86	245.00	0.0	0.00	0.00	0.00		
		-24.46	L	-18.82	207.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.34	R	77.18	245.00	0.0	0.00	0.00	0.00		
		-35.19	L	-27.07	205.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	107.73	R	82.87	249.00	0.0	0.00	0.00	0.00		
		-38.11	L	-29.32	202.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	98.63	R	75.87	247.00	0.0	0.00	0.00	0.00		
		-33.25	L	-25.57	203.00	0.0	0.00	0.00	0.00	0.00	

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.80	1.57	5.80	HS 31.40	56.5
HS20	2.62	9.68	2.62	9.68	HS 52.33	94.2
2F1	3.87	14.85	3.87	14.85	0.00	58.1
3F1	3.00	10.32	3.00	10.32	0.00	69.1
4F1	2.80	9.53	2.80	9.53	0.00	75.5

5C1	3.06	10.92	3.06	10.92	0.00	122.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.0	168.3	-239.2
OPER	359.7C	-319.4	319.4	-359.7C	320.7	-358.4	280.4	-398.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50			
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00		
OPER	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50			
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00		
OPER	2F1	82.85 R	63.73	247.50	0.0	0.00	0.00	0.00			
		-20.38 L	-15.68	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	113.07 L	86.98	227.50	0.0	0.00	0.00	0.00			
		-29.32 L	-22.56	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	120.28 R	92.52	251.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	107.89 L	82.99	225.50	0.0	0.00	0.00	0.00			
		-27.70 L	-21.31	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.59	6.88	1.39	7.65	HS 27.74	49.9
HS20	2.64	11.46	2.31	12.75	HS 46.24	83.2
2F1	3.87	17.58	3.38	19.56	0.00	50.8
3F1	2.84	12.22	2.48	13.60	0.00	57.0
4F1	2.67	11.28	2.33	12.55	0.00	63.0
5C1	2.97	12.94	2.60	14.39	0.00	104.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.7	78.1
OPER	172.1	-134.6	130.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.70	15.07	-7.46	11.59	-9.15	13.93	-7.04	10.71
OPER	HS20	-9.70	15.07	-7.46	11.59	-9.15	13.93	-7.04	10.71
OPER	2F1	-6.50	9.72	-5.00	7.47	0.00	0.00	0.00	0.00
OPER	3F1	-8.08	12.69	-6.22	9.76	0.00	0.00	0.00	0.00
OPER	4F1	-7.40	12.77	-5.69	9.82	0.00	0.00	0.00	0.00
OPER	5C1	-8.38	13.46	-6.45	10.35	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.32	5.18	HS 103.69	186.6
HS20	13.87	8.64	HS 172.82	311.1
2F1	20.71	13.40	0.00	201.0
3F1	16.64	10.26	0.00	235.9
4F1	18.19	10.20	0.00	275.4
5C1	16.05	9.68	0.00	387.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.7	214.9	-183.7	214.9	-183.7	175.9	-222.7	175.9	-
OPER 371.2	332.2	-332.2	332.2	-332.2	293.2	-371.2	293.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50	
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00
OPER	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50	
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00
OPER	2F1	82.85 R	63.73	247.50	0.0	0.00	0.00	0.00	
		-20.38 L	-15.68	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	113.07 L	86.98	227.50	0.0	0.00	0.00	0.00	
		-29.32 L	-22.56	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	120.28 R	92.52	251.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	107.89 L	82.99	225.50	0.0	0.00	0.00	0.00	
		-27.70 L	-21.31	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	7.12	1.45	7.12	HS 29.01	52.2
HS20	2.42	11.87	2.42	11.87	HS 48.35	87.0
2F1	3.54	18.21	3.54	18.21	0.00	53.1
3F1	2.59	12.66	2.59	12.66	0.00	59.6
4F1	2.44	11.69	2.44	11.69	0.00	65.8

5C1	2.72	13.40	2.72	13.40	0.00	108.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 10.600 2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 38.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	190.8	-216.6	166.7	-240.8
OPER	359.7C	-319.4	319.4	-359.7C	318.0	-361.1	277.8	-401.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00			
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00		
OPER	HS20	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00			
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00		
OPER	2F1	86.55 L	66.58	230.00	0.0	0.00	0.00	0.00			
		-16.31 L	-12.54	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.46 L	88.82	230.00	0.0	0.00	0.00	0.00			
		-23.46 L	-18.05	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	123.73 L	95.18	226.00	0.0	0.00	0.00	0.00			
		-25.41 L	-19.54	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	110.37 L	84.90	228.00	0.0	0.00	0.00	0.00			
		-22.16 L	-17.05	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	8.66	1.30	9.62	HS 25.92	46.6
HS20	2.47	14.43	2.16	16.04	HS 43.19	77.7
2F1	3.67	22.14	3.21	24.61	0.00	48.1
3F1	2.75	15.39	2.41	17.11	0.00	55.3
4F1	2.57	14.21	2.24	15.80	0.00	60.6
5C1	2.88	16.29	2.52	18.11	0.00	100.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.86	11.47	-9.89	8.82	-11.81	11.17	-9.09	8.59
OPER	HS20	-12.86	11.47	-9.89	8.82	-11.81	11.17	-9.09	8.59
OPER	2F1	-8.65	7.17	-6.66	5.51	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	9.82	-8.56	7.55	0.00	0.00	0.00	0.00
OPER	4F1	-11.03	9.12	-8.49	7.01	0.00	0.00	0.00	0.00
OPER	5C1	-10.92	11.03	-8.40	8.48	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.18	6.93	HS 123.53	222.4
HS20	10.29	11.54	HS 205.89	370.6
2F1	15.30	18.47	0.00	229.5
3F1	11.90	13.48	0.00	273.7
4F1	12.00	14.52	0.00	324.1
5C1	12.12	12.00	0.00	480.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 38.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 224.3	216.0	-182.7	216.0	-182.7	174.3	-224.3	174.3	-
OPER 373.9	332.2	-332.2	332.2	-332.2	290.5	-373.9	290.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	128.61 R	98.93	254.00	0.0	99.47	240.00	
		-25.02 L	-19.25	192.00	0.0	-18.49	215.00	0.00
OPER	HS20	128.61 R	98.93	254.00	0.0	99.47	240.00	
		-25.02 L	-19.25	192.00	0.0	-18.49	215.00	0.00
OPER	2F1	86.55 L	66.58	230.00	0.0	0.00	0.00	
		-16.31 L	-12.54	207.50	0.0	0.00	0.00	0.00
OPER	3F1	115.46 L	88.82	230.00	0.0	0.00	0.00	
		-23.46 L	-18.05	205.00	0.0	0.00	0.00	0.00
OPER	4F1	123.73 L	95.18	226.00	0.0	0.00	0.00	
		-25.41 L	-19.54	202.00	0.0	0.00	0.00	0.00
OPER	5C1	110.37 L	84.90	228.00	0.0	0.00	0.00	
		-22.16 L	-17.05	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.36	8.97	1.36	8.97	HS 27.11	48.8
HS20	2.26	14.94	2.26	14.94	HS 45.18	81.3
2F1	3.36	22.93	3.36	22.93	0.00	50.4
3F1	2.52	15.94	2.52	15.94	0.00	57.9
4F1	2.35	14.72	2.35	14.72	0.00	63.4

5C1	2.63	16.87	2.63	16.87	0.00	105.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.1	168.2	-239.3
OPER	359.7C	-319.4	319.4	-359.7C	320.6	-358.5	280.3	-398.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50			
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00		
OPER	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50			
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00		
OPER	2F1	82.40 L	63.39	232.50	0.0	0.00	0.00	0.00			
		-12.23 L	-9.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	108.59 L	83.53	228.50	0.0	0.00	0.00	0.00			
		-17.59 L	-13.53	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.33 L	87.18	228.50	0.0	0.00	0.00	0.00			
		-19.06 L	-14.66	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	105.12 L	80.86	226.50	0.0	0.00	0.00	0.00			
		-16.62 L	-12.79	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	11.46	1.31	12.75	HS 26.21	47.2
HS20	2.50	19.11	2.18	21.25	HS 43.68	78.6
2F1	3.89	29.32	3.40	32.61	0.00	51.0
3F1	2.95	20.38	2.58	22.67	0.00	59.4
4F1	2.83	18.82	2.47	20.93	0.00	66.8
5C1	3.05	21.57	2.67	23.99	0.00	106.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.2	80.7
OPER	172.1	-130.3	134.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.11	8.72	-13.16	6.71	-14.73	8.44	-11.33	6.49
OPER	HS20	-17.11	8.72	-13.16	6.71	-14.73	8.44	-11.33	6.49
OPER	2F1	-10.99	5.45	-8.45	4.19	0.00	0.00	0.00	0.00
OPER	3F1	-14.48	6.82	-11.14	5.25	0.00	0.00	0.00	0.00
OPER	4F1	-14.28	5.62	-10.98	4.32	0.00	0.00	0.00	0.00
OPER	5C1	-14.02	8.44	-10.78	6.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.57	9.25	HS 91.37	164.5
HS20	7.61	15.41	HS 152.28	274.1
2F1	11.86	24.66	0.00	177.9
3F1	9.00	19.70	0.00	207.0
4F1	9.13	23.93	0.00	246.5
5C1	9.30	15.93	0.00	371.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.8	215.0	-183.7	215.0	-183.7	175.9	-222.8	175.9	-
OPER 371.3	332.2	-332.2	332.2	-332.2	293.1	-371.3	293.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50	
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00
OPER	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50	
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00
OPER	2F1	82.40 L	63.39	232.50	0.0	0.00	0.00	0.00	0.00
		-12.23 L	-9.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.59 L	83.53	228.50	0.0	0.00	0.00	0.00	0.00
		-17.59 L	-13.53	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.33 L	87.18	228.50	0.0	0.00	0.00	0.00	0.00
		-19.06 L	-14.66	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.12 L	80.86	226.50	0.0	0.00	0.00	0.00	0.00
		-16.62 L	-12.79	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.37	11.87	1.37	11.87	HS 27.40	49.3
HS20	2.28	19.79	2.28	19.79	HS 45.67	82.2
2F1	3.56	30.36	3.56	30.36	0.00	53.4
3F1	2.70	21.10	2.70	21.10	0.00	62.1
4F1	2.59	19.49	2.59	19.49	0.00	69.8

5C1	2.79	22.34	2.79	22.34	0.00	111.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.0	-210.4	172.9	-234.6
OPER	359.7C	-319.4	319.4	-359.7C	328.4	-350.7	288.1	-391.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00			
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00		
OPER	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00			
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00		
OPER	2F1	67.31 L	51.78	235.00	0.0	0.00	0.00	0.00			
		-8.15 L	-6.27	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.42 L	69.55	231.00	0.0	0.00	0.00	0.00			
		-11.73 L	-9.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.72 L	69.79	227.00	0.0	0.00	0.00	0.00			
		-12.70 L	-9.77	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	87.66 L	67.43	229.00	0.0	0.00	0.00	0.00			
		-11.08 L	-8.52	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	16.82	1.59	18.75	HS 31.76	57.2
HS20	3.02	28.04	2.65	31.25	HS 52.94	95.3
2F1	4.88	43.02	4.28	47.96	0.00	64.2
3F1	3.63	29.90	3.19	33.33	0.00	73.3
4F1	3.62	27.61	3.18	30.78	0.00	85.7
5C1	3.75	31.65	3.29	35.28	0.00	131.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-3.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.9	81.9
OPER	172.1	-128.2	136.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.77	5.87	-16.75	4.52	-17.86	5.76	-13.74	4.43
OPER	HS20	-21.77	5.87	-16.75	4.52	-17.86	5.76	-13.74	4.43
OPER	2F1	-13.46	3.67	-10.36	2.82	0.00	0.00	0.00	0.00
OPER	3F1	-18.08	3.75	-13.91	2.88	0.00	0.00	0.00	0.00
OPER	4F1	-18.14	3.09	-13.96	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-17.53	5.68	-13.49	4.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.53	13.95	HS 70.67	127.2
HS20	5.89	23.25	HS 117.78	212.0
2F1	9.52	37.20	0.00	142.9
3F1	7.09	36.43	0.00	163.1
4F1	7.07	44.24	0.00	190.8
5C1	7.31	24.04	0.00	292.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 10.800 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 218.1	211.8	-186.8	211.8	-186.8	180.5	-218.1	180.5	-
OPER 363.5	332.2	-332.2	332.2	-332.2	300.9	-363.5	300.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00	
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00
OPER	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00	
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00
OPER	2F1	67.31 L	51.78	235.00	0.0	0.00	0.00	0.00	
		-8.15 L	-6.27	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.42 L	69.55	231.00	0.0	0.00	0.00	0.00	
		-11.73 L	-9.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.72 L	69.79	227.00	0.0	0.00	0.00	0.00	
		-12.70 L	-9.77	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.66 L	67.43	229.00	0.0	0.00	0.00	0.00	
		-11.08 L	-8.52	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.66	17.43	1.66	17.43	HS 33.17	59.7
HS20	2.76	29.06	2.76	29.06	HS 55.29	99.5
2F1	4.47	44.58	4.47	44.58	0.00	67.1
3F1	3.33	30.99	3.33	30.99	0.00	76.5
4F1	3.32	28.61	3.32	28.61	0.00	89.5

5C1	3.43	32.80	3.43	32.80	0.00	137.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	204.8	-202.6	180.7	-226.8
OPER	359.7C	-319.4	319.4	-359.7C	341.4	-337.7	301.2	-378.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50			
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00		0.00	
OPER	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50			
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00		0.00	
OPER	2F1	40.11 L	30.86	237.50	0.0	0.00	0.00	0.00			
		-4.08 L	-3.14	207.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00			
		-5.86 L	-4.51	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	55.94 L	43.03	229.50	0.0	0.00	0.00	0.00			
		-6.35 L	-4.89	202.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	53.15 L	40.89	231.50	0.0	0.00	0.00	0.00			
		-5.54 L	-4.26	203.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	32.39	2.70	36.26	HS 54.01	97.2
HS20	5.10	53.99	4.50	60.43	HS 90.02	162.0
2F1	8.51	82.84	7.51	92.71	0.00	112.6
3F1	6.24	57.58	5.50	64.45	0.00	126.6
4F1	6.10	53.17	5.38	59.51	0.00	145.3
5C1	6.42	60.94	5.67	68.21	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
Check Point I. D. 10.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear
-0.6 -5.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.7	83.2
OPER	172.1	-126.1	138.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-26.76	2.95	-20.59	2.27	-21.20	3.16	-16.31	2.43
OPER	HS20	-26.76	2.95	-20.59	2.27	-21.20	3.16	-16.31	2.43
OPER	2F1	-16.05	1.85	-12.34	1.42	0.00	0.00	0.00	0.00
OPER	3F1	-21.89	2.35	-16.84	1.80	0.00	0.00	0.00	0.00
OPER	4F1	-22.38	2.53	-17.21	1.95	0.00	0.00	0.00	0.00
OPER	5C1	-21.26	3.69	-16.36	2.84	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.83	26.29	HS 56.55	101.8
HS20	4.71	43.82	HS 94.24	169.6
2F1	7.86	75.09	0.00	117.9
3F1	5.76	59.10	0.00	132.5
4F1	5.64	54.77	0.00	152.2
5C1	5.93	37.57	0.00	237.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 210.3	206.6	-192.0	206.6	-192.0	188.4	-210.3	188.4	-
OPER 350.5	332.2	-332.2	332.2	-332.2	313.9	-350.5	313.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50	
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00
OPER	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50	
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00
OPER	2F1	40.11 L	30.86	237.50	0.0	0.00	0.00	0.00	
		-4.08 L	-3.14	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00	
		-5.86 L	-4.51	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.94 L	43.03	229.50	0.0	0.00	0.00	0.00	
		-6.35 L	-4.89	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.15 L	40.89	231.50	0.0	0.00	0.00	0.00	
		-5.54 L	-4.26	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.82	33.62	2.82	33.62	HS 56.30	101.3
HS20	4.69	56.03	4.69	56.03	HS 93.84	168.9
2F1	7.83	85.97	7.83	85.97	0.00	117.4
3F1	5.74	59.76	5.74	59.76	0.00	131.9
4F1	5.61	55.18	5.61	55.18	0.00	151.5

5C1 5.91 63.25 5.91 63.25 0.00 236.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.4	79.9
OPER	172.1	-124.0	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.36	-19.01	1.82
OPER	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.36	-19.01	1.82
OPER	2F1	-18.71	0.00	-14.39	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-25.85	0.00	-19.89	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.84	0.00	-20.64	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	0.00	-19.35	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.32	33.80	HS 46.48	83.7
HS20	3.87	56.33	HS 77.46	139.4
2F1	6.63	999.00	0.00	99.4
3F1	4.80	999.00	0.00	110.3
4F1	4.62	999.00	0.00	124.8
5C1	4.93	999.00	0.00	197.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.272

Second Live Load Dist. Factor 1.272

Comments:

Member I. D.	S02					Symmetry:
Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5	
	25.000	25.000	25.000	25.000	25.000	
	Span 6	Span 7	Span 8	Span 9	Span 10	
	25.000	25.000	25.000	25.000	25.000	

Range Length -- Non-Composite:							
Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	25.000	1	0		0.0	0.0
2	1	25.000	2	0		0.0	0.0
3	1	25.000	2	0		0.0	0.0
4	1	25.000	2	0		0.0	0.0
5	1	25.000	2	0		0.0	0.0
6	1	25.000	2	0		0.0	0.0
7	1	25.000	2	0		0.0	0.0
8	1	25.000	2	0		0.0	0.0
9	1	25.000	2	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:						
Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	615.0	615.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	615.0	615.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	615.0	615.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.000 2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.000

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.3
OPER	172.1	-139.3	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	2F1	-1.81	20.82	-1.40	16.01	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	28.77	-2.01	22.13	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	29.87	-2.17	22.97	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	27.99	-1.77	21.53	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.32	2.11	HS 42.26	76.1
HS20	52.21	3.52	HS 70.43	126.8
2F1	76.74	6.03	0.00	90.4
3F1	53.34	4.36	0.00	100.3
4F1	49.44	4.20	0.00	113.4
5C1	60.60	4.48	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00			
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00			
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00			
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00			
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.25	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.5	76.3
OPER	172.1	-137.5	127.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	2F1	-2.05	17.86	-1.58	13.74	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	24.36	-2.01	18.74	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	24.90	-2.17	19.16	0.00	0.00	0.00	0.00
OPER	5C1	-4.11	23.66	-3.16	18.20	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.44	2.56	HS 51.25	92.3
HS20	39.06	4.27	HS 85.42	153.8
2F1	66.95	7.12	0.00	106.9
3F1	52.68	5.22	0.00	120.1
4F1	48.82	5.11	0.00	137.9
5C1	33.50	5.38	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.100 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00	0.00
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00	0.00
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00	0.00
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00	0.00
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1

5.36

56.32

5.36

56.32

0.00

214.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00			
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00			
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00			
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00			
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.65	14.88	1.45	16.62	HS 29.08	52.3
HS20	2.76	24.80	2.42	27.69	HS 48.47	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.5	77.4
OPER	172.1	-135.8	128.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	2F1	-4.08	14.98	-3.14	11.52	0.00	0.00	0.00	0.00
OPER	3F1	-4.17	20.12	-3.21	15.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.43	20.19	-2.64	15.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	19.51	-4.86	15.01	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.47	3.19	HS 63.86	114.9
HS20	20.78	5.32	HS 106.43	191.6
2F1	33.25	8.61	0.00	129.1
3F1	32.57	6.41	0.00	147.3
4F1	39.55	6.39	0.00	172.4
5C1	21.49	6.61	0.00	264.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00	
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00	
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00	
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00	
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.300 2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00			
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00			
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00			
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00			
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.5
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Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	103.3	-80.5 78.4
OPER	172.1	-134.1 130.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)
INV.	HS20	-9.71 19.04	-7.47 14.65	-9.39 16.39	-7.22 12.61				
OPER	HS20	-9.71 19.04	-7.47 14.65	-9.39 16.39	-7.22 12.61				
OPER	2F1	-6.07 12.23	-4.67 9.41	0.00 0.00	0.00 0.00				
OPER	3F1	-7.59 16.11	-5.84 12.39	0.00 0.00	0.00 0.00				
OPER	4F1	-6.25 15.89	-4.81 12.22	0.00 0.00	0.00 0.00				
OPER	5C1	-9.40 15.60	-7.23 12.00	0.00 0.00	0.00 0.00				

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	8.29	4.12	HS 82.32	148.2
HS20	13.82	6.86	HS 137.20	247.0
2F1	22.11	10.69	0.00	160.3
3F1	17.66	8.11	0.00	186.5
4F1	21.45	8.22	0.00	222.0
5C1	14.27	8.38	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.300 2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00	
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00	
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00	
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00	
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
3.7	30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13	L	110.10	-4.00	0.0	110.70	85.15	10.00		
		-27.84	R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00	
OPER	HS20	143.13	L	110.10	-4.00	0.0	110.70	85.15	10.00		
		-27.84	R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00	
OPER	2F1	96.32	R	74.09	20.00	0.0	0.00	0.00	0.00	0.00	0.00
		-18.15	R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	128.49	R	98.84	20.00	0.0	0.00	0.00	0.00	0.00	0.00
		-26.11	R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	137.69	R	105.92	24.00	0.0	0.00	0.00	0.00	0.00	0.00
		-28.27	R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	122.83	R	94.48	22.00	0.0	0.00	0.00	0.00	0.00	0.00
		-24.67	R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	2F1	-7.97	9.63	-6.13	7.41	0.00	0.00	0.00	0.00
OPER	3F1	-10.92	12.38	-8.40	9.53	0.00	0.00	0.00	0.00
OPER	4F1	-10.15	11.80	-7.81	9.08	0.00	0.00	0.00	0.00
OPER	5C1	-12.27	12.15	-9.44	9.35	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.22	5.55	HS 110.98	199.8
HS20	10.38	9.25	HS 184.96	332.9
2F1	16.60	13.74	0.00	206.1
3F1	12.12	10.69	0.00	245.9
4F1	13.05	11.22	0.00	302.9
5C1	10.79	10.89	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00	
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00	
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00	
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00	
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00			
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00			
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00			
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00			
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	6.06	1.28	6.76	HS 25.52	45.9
HS20	2.42	10.11	2.13	11.26	HS 42.53	76.6
2F1	3.55	15.51	3.11	17.28	0.00	46.7
3F1	2.60	10.78	2.28	12.01	0.00	52.5
4F1	2.45	9.95	2.14	11.09	0.00	57.9
5C1	2.73	11.41	2.39	12.72	0.00	95.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-1.6	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.7	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	2F1	-10.81	7.23	-8.32	5.56	0.00	0.00	0.00	0.00
OPER	3F1	-14.12	9.00	-10.86	6.92	0.00	0.00	0.00	0.00
OPER	4F1	-14.21	8.23	-10.93	6.33	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.33	-11.52	7.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.68	7.45	HS 93.51	168.3
HS20	7.79	12.42	HS 155.86	280.5
2F1	12.08	18.55	0.00	181.2
3F1	9.25	14.90	0.00	212.8
4F1	9.20	16.29	0.00	248.3
5C1	8.73	14.37	0.00	349.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	134.99 L	103.84 R	-15.50 58.00	0.0	110.27 -25.71	84.83 -19.78	12.50 35.00	0.00
OPER	HS20	134.99 L	103.84 R	-15.50 58.00	0.0	110.27 -25.71	84.83 -19.78	12.50 35.00	0.00
OPER	2F1	92.20 L	70.92 R	2.50 42.50	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	3F1	125.83 R	96.79 L	22.50 45.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	4F1	133.85 L	102.96 R	-1.50 48.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	5C1	120.06 R	92.36 L	24.50 47.00	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00		0.00	
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00		0.00	
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00		0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00		0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00		0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00		0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-3.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.3	81.6
OPER	172.1	-128.8	135.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	2F1	-13.52	5.06	-10.40	3.89	0.00	0.00	0.00	0.00
OPER	3F1	-17.64	6.00	-13.57	4.62	0.00	0.00	0.00	0.00
OPER	4F1	-18.09	5.13	-13.92	3.94	0.00	0.00	0.00	0.00
OPER	5C1	-17.52	6.97	-13.48	5.36	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.82	10.86	HS 76.34	137.4
HS20	6.36	18.10	HS 127.23	229.0
2F1	9.53	26.87	0.00	142.9
3F1	7.30	22.64	0.00	167.9
4F1	7.12	26.51	0.00	192.2
5C1	7.35	19.49	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.600 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
2.8 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00			
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00			
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00			
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.5	-4.7		0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	103.3	-76.3		82.6
OPER	172.1	-127.1		137.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	2F1	-16.05	3.16	-12.35	2.43	0.00	0.00	0.00	0.00
OPER	3F1	-21.68	3.43	-16.68	2.64	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.52	-17.06	1.94	0.00	0.00	0.00	0.00
OPER	5C1	-20.67	4.78	-15.90	3.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.94	16.00	HS 58.80	105.8
HS20	4.90	26.67	HS 98.00	176.4
2F1	7.92	43.52	0.00	118.7
3F1	5.86	40.11	0.00	134.8
4F1	5.73	54.68	0.00	154.7
5C1	6.15	28.80	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00	
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00	
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00	
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.72	4.27	1.72	4.27	HS 34.42	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1

3.52

8.03

3.52

8.03

0.00

140.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00			
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00			
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00			
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00			
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.2	83.6
OPER	172.1	-125.4	139.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	2F1	-18.38	1.56	-14.14	1.20	0.00	0.00	0.00	0.00
OPER	3F1	-25.44	1.30	-19.57	1.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.13	0.75	-20.10	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-24.15	2.80	-18.58	2.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.40	26.56	HS 47.91	86.2
HS20	3.99	44.27	HS 79.85	143.7
2F1	6.82	89.07	0.00	102.3
3F1	4.93	107.27	0.00	113.3
4F1	4.80	184.65	0.00	129.6
5C1	5.19	49.75	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00	
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00	
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00	
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00	
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 1.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00			
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00			
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00			
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.68	2.60	7.76	2.95	HS 51.97	93.5
HS20	14.47	4.33	12.94	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.85	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.9	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.2	84.7
OPER	172.1	-123.6	141.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	2F1	-20.47	0.49	-15.74	0.37	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	0.70	-22.21	0.54	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	0.75	-23.39	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	1.11	-21.09	0.85	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.04	56.69	HS 40.77	73.4
HS20	3.40	94.49	HS 67.94	122.3
2F1	6.04	290.18	0.00	90.6
3F1	4.28	201.70	0.00	98.5
4F1	4.07	186.92	0.00	109.8
5C1	4.51	126.98	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00	
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00	
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00	
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.05	2.71	8.05	2.71	HS 54.19	97.5
HS20	13.42	4.52	13.42	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1 10.77 5.39 10.77 5.39 0.00 215.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.10	1.16	10.07	1.33	HS 23.26	41.9
HS20	18.50	1.94	16.79	2.21	HS 38.76	69.8
2F1	28.39	4.49	25.76	5.13	0.00	67.3
3F1	19.73	3.00	17.90	3.42	0.00	68.9
4F1	18.22	2.49	16.53	2.84	0.00	67.1
5C1	23.83	2.74	21.62	3.13	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	2F1	-20.47	21.85	-15.74	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	30.77	-22.21	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	32.52	-23.39	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	29.85	-21.09	22.96	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.131

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.10	1.16	10.07	1.33	HS 23.26	41.9
HS20	18.50	1.94	16.79	2.21	HS 38.76	69.8
2F1	28.39	4.49	25.76	5.13	0.00	67.3
3F1	19.73	3.00	17.90	3.42	0.00	68.9
4F1	18.22	2.49	16.53	2.84	0.00	67.1
5C1	23.83	2.74	21.62	3.13	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-9.4	8.1

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	2F1	-22.27	21.85	-17.13	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-31.91	30.77	-24.55	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-34.28	32.52	-26.37	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-30.41	29.85	-23.39	22.96	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	0.00		
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	0.00		
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	0.00		
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	0.00		
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	8.15	1.94	7.34	2.19	HS 38.82	69.9
HS20	13.58	3.23	12.24	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.2	65.4
OPER	151.3	-123.7	109.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	2F1	-2.27	19.49	-1.74	14.99	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	27.06	-2.51	20.81	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	28.06	-2.71	21.59	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	26.19	-2.71	20.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.26	1.94	HS 38.87	70.0
HS20	37.10	3.24	HS 64.78	116.6
2F1	54.55	5.60	0.00	84.0
3F1	37.92	4.03	0.00	92.7
4F1	35.14	3.89	0.00	104.9
5C1	35.13	4.16	0.00	166.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.6 -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.61	2.03	7.61	2.03	HS 40.53	73.0
HS20	12.69	3.38	12.69	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00			
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00			
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00			
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00			
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.87	0.00	209.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

2.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5

0.0

5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-122.0	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	2F1	-2.27	17.02	-1.74	13.09	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	23.17	-2.51	17.82	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	23.81	-2.71	18.32	0.00	0.00	0.00	0.00
OPER	5C1	-5.27	22.39	-4.06	17.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.69	2.34	HS 46.80	84.2
HS20	26.15	3.90	HS 77.99	140.4
2F1	53.80	6.51	0.00	97.6
3F1	37.40	4.78	0.00	109.9
4F1	34.66	4.65	0.00	125.6
5C1	23.13	4.95	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00	
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00	
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00	
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00	
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1

5.56

5.44

5.56

5.44

0.00

217.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00			
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00			
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00			
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	2F1	-3.98	14.36	-3.06	11.04	0.00	0.00	0.00	0.00
OPER	3F1	-4.27	19.12	-3.28	14.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	19.55	-2.71	15.04	0.00	0.00	0.00	0.00
OPER	5C1	-7.32	18.72	-5.63	14.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.04	2.93	HS 58.69	105.6
HS20	16.74	4.89	HS 97.81	176.1
2F1	30.24	7.83	0.00	117.5
3F1	28.18	5.88	0.00	135.3
4F1	34.18	5.75	0.00	155.3
5C1	16.43	6.01	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00			
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00			
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00			
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	2F1	-6.29	11.62	-4.84	8.94	0.00	0.00	0.00	0.00
OPER	3F1	-7.48	15.07	-5.75	11.59	0.00	0.00	0.00	0.00
OPER	4F1	-6.33	15.06	-4.87	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.64	15.88	-7.41	12.22	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.08	3.62	HS 72.45	130.4
HS20	11.81	6.04	HS 120.75	217.4
2F1	18.86	9.82	0.00	147.4
3F1	15.86	7.58	0.00	174.2
4F1	18.75	7.58	0.00	204.7
5C1	12.31	7.19	0.00	287.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.400 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	HS20	107.38	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	2F1	73.40	56.46	45.00	0.0	0.00	0.00	0.00	
		-24.62	-18.94	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85	72.19	45.00	0.0	0.00	0.00	0.00	
		-35.41	-27.24	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69	77.45	49.00	0.0	0.00	0.00	0.00	
		-38.29	-29.45	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18	69.37	47.00	0.0	0.00	0.00	0.00	
		-40.43	-31.10	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.2	13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	2F1	74.76	R	57.51	47.50	0.0	0.00	0.00	0.00		
		-18.29	L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	L	76.84	27.50	0.0	0.00	0.00	0.00		
		-26.30	L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	R	80.26	51.50	0.0	0.00	0.00	0.00		
		-28.44	L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	R	73.34	88.50	0.0	0.00	0.00	0.00		
		-38.29	L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.63	5.60	1.45	6.24	HS 28.98	52.2
HS20	2.72	9.34	2.41	10.39	HS 48.31	87.0
2F1	3.82	15.51	3.39	17.26	0.00	50.9
3F1	2.86	10.79	2.54	12.00	0.00	58.4
4F1	2.74	9.98	2.43	11.10	0.00	65.6
5C1	2.99	7.41	2.66	8.24	0.00	106.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.1	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	2F1	-8.83	8.91	-6.80	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-11.07	11.18	-8.52	8.60	0.00	0.00	0.00	0.00
OPER	4F1	-10.32	10.46	-7.94	8.04	0.00	0.00	0.00	0.00
OPER	5C1	-12.17	12.98	-9.36	9.99	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.82	4.70	HS 93.99	169.2
HS20	8.03	7.83	HS 156.65	282.0
2F1	13.23	13.00	0.00	194.9
3F1	10.56	10.36	0.00	238.3
4F1	11.32	11.08	0.00	299.2
5C1	9.61	8.92	0.00	357.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.500 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	2F1	74.76 R	57.51	47.50	0.0	0.00	0.00	0.00	
		-18.29 L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 L	76.84	27.50	0.0	0.00	0.00	0.00	
		-26.30 L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 R	80.26	51.50	0.0	0.00	0.00	0.00	
		-28.44 L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 R	73.34	88.50	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.1
 Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00			
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00			
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00			
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00			
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS 28.53	51.3
HS20	2.68	8.43	2.38	9.38	HS 47.54	85.6
2F1	3.89	12.93	3.46	14.40	0.00	51.9
3F1	3.04	8.99	2.70	10.01	0.00	62.2
4F1	2.84	8.30	2.52	9.24	0.00	68.0
5C1	3.08	7.44	2.73	8.28	0.00	109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.1	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	2F1	-11.53	6.35	-8.87	4.89	0.00	0.00	0.00	0.00
OPER	3F1	-14.95	7.59	-11.50	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-14.93	6.49	-11.48	4.99	0.00	0.00	0.00	0.00
OPER	5C1	-14.92	10.51	-11.48	8.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.70	6.75	HS 74.08	133.4
HS20	6.17	11.24	HS 123.47	222.3
2F1	9.98	18.52	0.00	149.7
3F1	7.70	15.50	0.00	177.0
4F1	7.71	18.12	0.00	208.2
5C1	7.71	11.19	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00	
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00	
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00	
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00	
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00			
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00			
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00			
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00			
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.83	3.94	1.63	4.39	HS 32.55	58.6
HS20	3.05	6.57	2.71	7.32	HS 54.25	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-2.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.0	71.6
OPER	151.3	-113.4	119.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	2F1	-14.27	4.03	-10.98	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.99	4.39	-14.61	3.38	0.00	0.00	0.00	0.00
OPER	4F1	-19.42	3.93	-14.94	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-18.31	8.12	-14.09	6.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.98	9.43	HS 59.62	107.3
HS20	4.97	15.72	HS 99.36	178.9
2F1	7.95	29.58	0.00	119.2
3F1	5.97	27.18	0.00	137.3
4F1	5.84	30.41	0.00	157.6
5C1	6.19	14.70	0.00	247.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00	
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00	
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00	
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00	
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00			
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00			
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

2.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.6
OPER	151.3	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	2F1	-16.94	2.53	-13.03	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-23.05	3.64	-17.73	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-23.67	3.93	-18.20	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-21.87	5.87	-16.82	4.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	14.38	HS 47.54	85.6
HS20	3.96	23.97	HS 79.23	142.6
2F1	6.59	47.78	0.00	98.9
3F1	4.84	33.22	0.00	111.4
4F1	4.72	30.84	0.00	127.4
5C1	5.11	20.61	0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00	
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00	
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00			
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00			
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00			
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00			
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.68	2.32	6.00	2.61	HS 46.38	83.5
HS20	11.14	3.87	10.01	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.6
OPER	151.3	-110.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	2F1	-19.43	2.53	-14.95	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	3.64	-20.74	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	3.94	-21.49	3.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	3.90	-19.58	3.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.97	17.50	HS 39.46	71.0
HS20	3.29	29.16	HS 65.77	118.4
2F1	5.66	48.44	0.00	84.9
3F1	4.08	33.68	0.00	93.9
4F1	3.94	31.15	0.00	106.3
5C1	4.32	31.51	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 2.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.23	2.42	6.23	2.42	HS 48.34	87.0
HS20	10.39	4.03	10.39	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1 9.37 5.08 9.37 5.08 0.00 203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	2F1	-19.43	21.64	-14.95	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	30.57	-20.74	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	32.33	-21.49	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	28.84	-19.58	22.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.3	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	2F1	-21.63	21.64	-16.64	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.54	30.57	-23.49	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-32.28	32.33	-24.83	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.86	28.84	-22.20	22.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00			
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00			
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00			
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00			
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.53	2.34	5.87	2.63	HS 46.78	84.2
HS20	10.89	3.90	9.78	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	2F1	-2.26	19.45	-1.74	14.97	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.47	-2.71	19.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.56	1.96	HS 39.26	70.7
HS20	34.26	3.27	HS 65.44	117.8
2F1	54.57	5.64	0.00	84.5
3F1	37.93	4.06	0.00	93.4
4F1	35.15	3.92	0.00	105.7
5C1	34.94	4.31	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00	
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00	
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00	
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00	
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.09	2.44	6.09	2.44	HS 48.76	87.8
HS20	10.15	4.06	10.15	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
0.1 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00			
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00			
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00			
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00			
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.85	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.8
OPER	151.3	-121.4	111.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	2F1	-2.26	16.97	-1.74	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.78	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.72	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.65	2.36	HS 47.27	85.1
HS20	24.41	3.94	HS 78.78	141.8
2F1	53.82	6.56	0.00	98.4
3F1	37.41	4.82	0.00	110.8
4F1	34.67	4.70	0.00	126.8
5C1	22.95	5.08	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.200 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1 4.54 6.28 4.54 6.28 0.00 181.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00			
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00			
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00			
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00			
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	2F1	-4.01	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.06	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.57	2.96	HS 59.26	106.7
HS20	15.95	4.94	HS 98.76	177.8
2F1	29.82	7.90	0.00	118.5
3F1	27.39	5.93	0.00	136.4
4F1	34.18	5.80	0.00	156.7
5C1	16.27	6.16	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1	3.31	7.21	3.31	7.21	0.00	132.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00			
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00			
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00			
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00			
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.5
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Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-70.8	68.8
OPER	151.3	-118.0	114.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	2F1	-6.32	11.58	-4.86	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	15.00	-4.97	11.54	0.00	0.00	0.00	0.00
OPER	5C1	-9.68	14.97	-7.45	11.51	0.00	0.00	0.00	0.00

Veh.	Rating				Load Capacity (tons)
	(-)	Factor (+)	Rating Value	Shear	
HS20	6.83	3.69	HS 73.75	132.8	
HS20	11.38	6.15	HS 122.92	221.3	
2F1	18.67	9.91	0.00	148.6	
3F1	15.63	7.64	0.00	175.8	
4F1	18.26	7.65	0.00	206.5	
5C1	12.19	7.66	0.00	306.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00	
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00	
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00	
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00	
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00			
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00			
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00			
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	-0.1	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	2F1	-8.87	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.14	-8.56	8.57	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-7.99	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.19	-9.40	9.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.58	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.4
4F1	11.19	11.20	0.00	302.3
5C1	9.52	9.56	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00	
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00	
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.5	15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00			
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00			
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.58	5.09	1.40	5.66	HS 28.01	50.4
HS20	2.63	8.49	2.33	9.44	HS 46.69	84.0
2F1	3.85	13.02	3.41	14.49	0.00	51.2
3F1	3.01	9.05	2.67	10.07	0.00	61.3
4F1	2.80	8.36	2.49	9.30	0.00	67.1
5C1	3.04	7.58	2.70	8.43	0.00	107.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.2	-1.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	2F1	-11.57	6.33	-8.90	4.87	0.00	0.00	0.00	0.00
OPER	3F1	-15.00	7.56	-11.54	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.66	-11.51	7.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.90	HS 73.59	132.5
HS20	6.13	11.50	HS 122.64	220.8
2F1	9.89	18.69	0.00	148.4
3F1	7.63	15.65	0.00	175.5
4F1	7.64	18.29	0.00	206.2
5C1	7.65	12.24	0.00	306.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00	
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00	
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1 2.81 7.86 2.81 7.86 0.00 112.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.65	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.48	-14.98	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.34	-14.12	5.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.70	HS 59.15	106.5
HS20	4.93	16.17	HS 98.58	177.4
2F1	7.88	29.86	0.00	118.3
3F1	5.92	27.43	0.00	136.2
4F1	5.79	34.43	0.00	156.4
5C1	6.14	16.34	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.8	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-66.7 73.0
OPER	151.3	-111.1 121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.		w/imp.	w/o imp.			
		(-) (+)	(-) (+)		(-) (+)	(-) (+)			
INV.	HS20	-28.26 3.27	-21.74 2.52		-23.35 4.88	-17.96 3.76			
OPER	HS20	-28.26 3.27	-21.74 2.52		-23.35 4.88	-17.96 3.76			
OPER	2F1	-16.97 2.24	-13.05 1.73		0.00 0.00	0.00 0.00			
OPER	3F1	-23.10 3.23	-17.77 2.48		0.00 0.00	0.00 0.00			
OPER	4F1	-23.71 3.48	-18.24 2.68		0.00 0.00	0.00 0.00			
OPER	5C1	-21.92 5.28	-16.86 4.06		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.36	14.94	HS 47.18	84.9
HS20	3.93	24.90	HS 78.63	141.5
2F1	6.55	54.20	0.00	98.2
3F1	4.81	37.68	0.00	110.6
4F1	4.69	34.92	0.00	126.5
5C1	5.07	23.06	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00			
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.82	2.31	6.13	2.60	HS 46.10	83.0
HS20	11.37	3.84	10.22	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
-0.6	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	2F1	-19.45	2.24	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.23	-20.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	3.50	-21.53	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.51	-19.61	2.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	21.21	HS 39.18	70.5
HS20	3.27	35.35	HS 65.30	117.5
2F1	5.62	54.96	0.00	84.4
3F1	4.05	38.20	0.00	93.2
4F1	3.91	35.27	0.00	105.5
5C1	4.29	35.16	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 3.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00	
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.36	2.40	6.36	2.40	HS 48.06	86.5
HS20	10.60	4.01	10.60	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.3	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.90	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00			
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.9	7.8

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.32	32.33	-24.86	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.90	-22.22	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.6 -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00			
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00			
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00			
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00			
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.74	2.30	6.06	2.60	HS 46.08	82.9
HS20	11.24	3.84	10.10	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.50	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.82	1.96	HS 39.21	70.6
HS20	34.69	3.27	HS 65.35	117.6
2F1	54.66	5.63	0.00	84.4
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	35.00	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.6 -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.29	2.40	6.29	2.40	HS 48.04	86.5
HS20	10.48	4.00	10.48	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00		15.00	
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00		15.00	
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00			
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00			
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00			
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00			
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.52	HS 49.05	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.75	147.1
2F1	7.08	8.05	6.33	9.01	0.00	94.9
3F1	5.80	5.59	5.19	6.26	0.00	119.3
4F1	6.30	5.17	5.63	5.78	0.00	139.5
5C1	5.00	5.96	4.47	6.67	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.77	2.36	HS 47.21	85.0
HS20	24.62	3.93	HS 78.68	141.6
2F1	53.91	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.73	4.69	0.00	126.6
5C1	22.98	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.6	167.0	-168.3	167.0	-168.3	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00	
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00	
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00	
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00	
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00			
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.9	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.96	HS 59.18	106.5
HS20	16.05	4.93	HS 98.64	177.5
2F1	29.85	7.89	0.00	118.3
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.29	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00	
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.400 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.4 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00			
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.58	5.08	1.41	5.65	HS 28.11	50.6
HS20	2.64	8.46	2.34	9.41	HS 46.85	84.3
2F1	3.86	12.99	3.43	14.45	0.00	51.4
3F1	3.02	9.03	2.68	10.04	0.00	61.6
4F1	2.81	8.34	2.49	9.27	0.00	67.4
5C1	3.05	7.55	2.71	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.7
OPER	151.3	-118.2	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.64	132.5
HS20	11.44	6.14	HS 122.73	220.9
2F1	18.69	9.90	0.00	148.5
3F1	15.64	7.63	0.00	175.6
4F1	18.28	7.64	0.00	206.3
5C1	12.20	7.65	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00	
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.57	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.5	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.53	172.0
HS20	7.97	7.96	HS 159.22	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.0
5C1	9.53	9.51	0.00	380.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.74	2.49	11.74	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.600 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.4 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	Dead Load Shear
-0.2	-1.6		0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	2F1	-11.57	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.84	HS 73.68	132.6
HS20	6.14	11.40	HS 122.80	221.0
2F1	9.90	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.7
4F1	7.65	18.27	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.3	-3.1	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.9
OPER	151.3	-113.0	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.59	HS 59.22	106.6
HS20	4.93	15.99	HS 98.70	177.7
2F1	7.89	29.83	0.00	118.4
3F1	5.93	27.41	0.00	136.4
4F1	5.80	34.24	0.00	156.6
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00		160.00	
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00		160.00	
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00		0.00	0.00
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00		0.00	0.00
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00		0.00	0.00
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00		0.00	0.00
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.5	-4.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)
INV.	90.8	-66.8	72.9
OPER	151.3	-111.3	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.69	HS 47.24	85.0
HS20	3.94	24.48	HS 78.73	141.7
2F1	6.56	53.90	0.00	98.3
3F1	4.82	37.46	0.00	110.8
4F1	4.69	34.72	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03	L	13.87	69.50	0.0	28.12	21.63	97.50		
		-65.63	L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50	
OPER	HS20	18.03	L	13.87	69.50	0.0	28.12	21.63	97.50		
		-65.63	L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50	
OPER	2F1	15.01	L	11.55	87.50	0.0	0.00	0.00	0.00		
		-38.82	R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	14.96	R	11.51	145.00	0.0	0.00	0.00	0.00		
		-55.85	R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	15.98	R	12.29	149.00	0.0	0.00	0.00	0.00		
		-60.48	R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	31.34	R	24.11	144.50	0.0	0.00	0.00	0.00		
		-52.05	R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.76	2.31	6.07	2.60	HS 46.18	83.1
HS20	11.26	3.85	10.12	4.34	HS 76.97	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.16	4.52	19.03	5.10	0.00	104.0
4F1	19.82	4.18	17.82	4.70	0.00	112.8
5C1	10.10	4.85	9.08	5.47	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6 -6.2 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.53	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.67	HS 39.23	70.6
HS20	3.27	34.44	HS 65.39	117.7
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.07	0.00	105.7
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 4.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.30	2.41	6.30	2.41	HS 48.15	86.7
HS20	10.51	4.01	10.51	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.64	2.31	5.97	2.60	HS 46.19	83.2
HS20	11.07	3.85	9.95	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.68	1.96	HS 39.22	70.6
HS20	34.47	3.27	HS 65.37	117.7
2F1	54.64	5.63	0.00	84.5
3F1	37.98	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.41	6.20	2.41	HS 48.16	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1 9.43 5.06 9.43 5.06 0.00 202.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.70	2.36	HS 47.23	85.0
HS20	24.50	3.94	HS 78.71	141.7
2F1	53.89	6.55	0.00	98.3
3F1	37.46	4.81	0.00	110.7
4F1	34.71	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	2.96	HS 59.21	106.6
HS20	16.00	4.93	HS 98.68	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.3
4F1	34.23	5.80	0.00	156.5
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.63	8.47	2.34	9.42	HS 46.78	84.2
2F1	3.85	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.04	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.66	132.6
HS20	11.41	6.14	HS 122.77	221.0
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.7
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.96	HS 159.28	286.7
2F1	13.11	13.10	0.00	196.6
3F1	10.46	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1 2.73 8.17 2.73 8.17 0.00 109.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.65	132.6
HS20	6.14	11.42	HS 122.75	220.9
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.61	HS 59.19	106.6
HS20	4.93	16.02	HS 98.66	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.28	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00		185.00	
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00		185.00	
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00		0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00		0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00		0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00		0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.61	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.73	HS 47.22	85.0
HS20	3.93	24.55	HS 78.70	141.7
2F1	6.55	53.90	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.97	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03	L	13.87	94.50	0.0	28.07	21.59	122.50		
		-65.63	L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50	
OPER	HS20	18.03	L	13.87	94.50	0.0	28.07	21.59	122.50		
		-65.63	L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50	
OPER	2F1	15.01	L	11.55	112.50	0.0	0.00	0.00	0.00		
		-38.82	R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	14.96	R	11.51	170.00	0.0	0.00	0.00	0.00		
		-55.85	R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.98	R	12.29	174.00	0.0	0.00	0.00	0.00		
		-60.48	R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34	R	24.11	169.50	0.0	0.00	0.00	0.00		
		-52.05	R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.77	2.31	6.09	2.60	HS 46.15	83.1
HS20	11.29	3.85	10.15	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6 -6.2 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.74	HS 39.22	70.6
HS20	3.27	34.56	HS 65.36	117.6
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	34.99	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 5.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.32	2.41	6.32	2.41	HS 48.12	86.6
HS20	10.53	4.01	10.53	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1

9.43

5.06

9.43

5.06

0.00

202.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.66	2.31	5.99	2.60	HS 46.15	83.1
HS20	11.10	3.85	9.98	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.74	1.96	HS 39.22	70.6
HS20	34.56	3.27	HS 65.36	117.6
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.21	2.41	6.21	2.41	HS 48.12	86.6
HS20	10.36	4.01	10.36	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1

9.43

5.06

9.43

5.06

0.00

202.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.73	2.36	HS 47.22	85.0
HS20	24.55	3.93	HS 78.70	141.7
2F1	53.90	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.72	4.69	0.00	126.6
5C1	22.97	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400	top	bott	9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24	R	74.03	160.50	0.0	72.56	55.82	132.50		
		-42.27	L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00	
OPER	HS20	96.24	R	74.03	160.50	0.0	72.56	55.82	132.50		
		-42.27	L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00	
OPER	2F1	62.87	R	48.36	142.50	0.0	0.00	0.00	0.00		
		-27.55	L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	79.89	R	61.46	146.50	0.0	0.00	0.00	0.00		
		-39.63	L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	82.06	R	63.13	146.50	0.0	0.00	0.00	0.00		
		-42.92	L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	80.57	L	61.98	85.50	0.0	0.00	0.00	0.00		
		-40.45	L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3	0.0	3.2
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.61	2.96	HS 59.19	106.6
HS20	16.02	4.93	HS 98.66	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.28	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.65	132.6
HS20	11.42	6.14	HS 122.75	220.9
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.6
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.55	172.0
HS20	7.97	7.96	HS 159.25	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1 2.73 8.17 2.73 8.17 0.00 109.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.63	8.47	2.34	9.42	HS 46.78	84.2
2F1	3.85	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.04	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.66	132.6
HS20	6.14	11.41	HS 122.77	221.0
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.7
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.60	HS 59.21	106.6
HS20	4.93	16.00	HS 98.68	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.41	0.00	136.3
4F1	5.80	34.23	0.00	156.5
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400	top	bott	9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.29	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.5	-4.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	90.8	-66.7	72.9	
OPER	151.3	-111.2	121.5	

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.70	HS 47.23	85.0
HS20	3.94	24.50	HS 78.71	141.7
2F1	6.55	53.89	0.00	98.3
3F1	4.81	37.46	0.00	110.7
4F1	4.69	34.71	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.75	2.31	6.07	2.60	HS 46.20	83.2
HS20	11.26	3.85	10.12	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.68	HS 39.22	70.6
HS20	3.27	34.47	HS 65.37	117.7
2F1	5.63	54.64	0.00	84.5
3F1	4.06	37.98	0.00	93.3
4F1	3.91	35.07	0.00	105.6
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 6.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.30	2.41	6.30	2.41	HS 48.16	86.7
HS20	10.50	4.01	10.50	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1 9.43 5.06 9.43 5.06 0.00 202.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400			9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.64	2.31	5.97	2.60	HS 46.18	83.1
HS20	11.07	3.85	9.95	4.34	HS 76.97	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.16	4.52	19.03	5.10	0.00	104.0
4F1	19.82	4.18	17.82	4.70	0.00	112.8
5C1	10.10	4.85	9.08	5.47	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.49	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.67	1.96	HS 39.23	70.6
HS20	34.44	3.27	HS 65.39	117.7
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.7
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.41	6.20	2.41	HS 48.15	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00		90.00	
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00		90.00	
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00		0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00		0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00		0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00		0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

7.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5

0.0

4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.5	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.49	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.69	2.36	HS 47.24	85.0
HS20	24.48	3.94	HS 78.73	141.7
2F1	53.90	6.56	0.00	98.3
3F1	37.46	4.82	0.00	110.8
4F1	34.72	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1 4.63 6.21 4.63 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.59	2.96	HS 59.22	106.6
HS20	15.99	4.93	HS 98.70	177.7
2F1	29.83	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.4
4F1	34.24	5.80	0.00	156.6
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	2F1	-6.32	11.57	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.84	3.68	HS 73.68	132.6
HS20	11.40	6.14	HS 122.80	221.0
2F1	18.67	9.90	0.00	148.6
3F1	15.63	7.64	0.00	175.7
4F1	18.27	7.65	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.56	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.59	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.2
5C1	9.52	9.52	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.73	2.49	11.73	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00			
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.41	5.65	HS 28.11	50.6
HS20	2.64	8.46	2.34	9.41	HS 46.85	84.3
2F1	3.86	12.99	3.43	14.45	0.00	51.4
3F1	3.02	9.03	2.68	10.04	0.00	61.6
4F1	2.81	8.34	2.49	9.27	0.00	67.4
5C1	3.05	7.55	2.71	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.6	118.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.64	132.5
HS20	6.14	11.44	HS 122.73	220.9
2F1	9.90	18.69	0.00	148.5
3F1	7.63	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.3
5C1	7.65	12.20	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00	
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00			
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.3	-3.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.63	HS 59.18	106.5
HS20	4.93	16.05	HS 98.64	177.5
2F1	7.89	29.85	0.00	118.3
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.29	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00	
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00			
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00			
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00			
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00			
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.52	HS 49.05	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.75	147.1
2F1	7.08	8.05	6.33	9.01	0.00	94.9
3F1	5.80	5.59	5.19	6.26	0.00	119.3
4F1	6.30	5.17	5.63	5.78	0.00	139.5
5C1	5.00	5.96	4.47	6.67	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

7.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.5	-4.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	90.8	-66.7	72.9	
OPER	151.3	-111.2	121.5	

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.77	HS 47.21	85.0
HS20	3.93	24.62	HS 78.68	141.6
2F1	6.55	53.91	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.98	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	167.0	-168.3	167.0	-168.3	168.6	-166.6	168.6	-
166.6								
OPER	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-
277.7								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00			
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00			
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00			
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.30	6.17	2.60	HS 46.08	82.9
HS20	11.43	3.84	10.28	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

7.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.82	HS 39.21	70.6
HS20	3.27	34.69	HS 65.35	117.6
2F1	5.63	54.66	0.00	84.4
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	35.00	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 7.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.6 -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00 162.50
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00 162.50
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00 0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00 0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00 0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.40	2.40	6.40	2.40	HS 48.04	86.5
HS20	10.67	4.00	10.67	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	28.89	-19.61	22.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-28.90	28.89	-22.23	22.22	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00		0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00		0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00		0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00		0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.70	2.31	6.03	2.60	HS 46.10	83.0
HS20	11.18	3.84	10.05	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.3	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	2F1	-2.24	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	27.00	-2.48	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	27.99	-2.68	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.51	25.49	-2.70	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.21	1.96	HS 39.18	70.5
HS20	35.35	3.27	HS 65.30	117.5
2F1	54.96	5.62	0.00	84.4
3F1	38.20	4.05	0.00	93.2
4F1	35.40	3.91	0.00	105.5
5C1	35.16	4.29	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00 187.50
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00 187.50
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00 0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00 0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00 0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.26	2.40	6.26	2.40	HS 48.06	86.5
HS20	10.43	4.01	10.43	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.7
OPER	151.3	-121.6	111.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	2F1	-2.24	16.97	-1.73	13.05	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	23.10	-2.48	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	23.71	-2.68	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	21.92	-4.06	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.94	2.36	HS 47.18	84.9
HS20	24.90	3.93	HS 78.63	141.5
2F1	54.20	6.55	0.00	98.2
3F1	37.68	4.81	0.00	110.6
4F1	34.92	4.69	0.00	126.5
5C1	23.06	5.07	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.2

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.65	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	19.48	-2.68	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.34	18.36	-5.65	14.12	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	9.70	2.96	HS 59.15	106.5
HS20	16.17	4.93	HS 98.58	177.4
2F1	29.86	7.88	0.00	118.3
3F1	27.43	5.92	0.00	136.2
4F1	34.43	5.79	0.00	156.4
5C1	16.34	6.14	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1 3.35 7.15 3.35 7.15 0.00 133.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00			
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00			
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.09	1.40	5.66	HS 28.01	50.4
HS20	2.63	8.49	2.33	9.44	HS 46.69	84.0
2F1	3.85	13.02	3.41	14.48	0.00	51.2
3F1	3.01	9.05	2.67	10.07	0.00	61.3
4F1	2.80	8.36	2.49	9.30	0.00	67.1
5C1	3.04	7.58	2.70	8.43	0.00	107.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	2F1	-6.33	11.57	-4.87	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.56	15.00	-5.81	11.54	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.66	14.97	-7.43	11.51	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.90	3.68	HS 73.59	132.5
HS20	11.50	6.13	HS 122.64	220.8
2F1	18.69	9.89	0.00	148.4
3F1	15.65	7.63	0.00	175.5
4F1	18.29	7.64	0.00	206.2
5C1	12.24	7.65	0.00	306.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00	
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00	
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1	2.81	7.86	2.81	7.86	0.00	112.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.7	17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00		0.00
OPER	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00		0.00
OPER	2F1	75.01	L	57.70	177.50	0.0	0.00	0.00	0.00		0.00
		-16.27	L	-12.51	157.50	0.0	0.00	0.00	0.00		0.00
OPER	3F1	100.30	R	77.16	197.50	0.0	0.00	0.00	0.00		0.00
		-23.40	L	-18.00	155.00	0.0	0.00	0.00	0.00		0.00
OPER	4F1	104.77	R	80.59	201.50	0.0	0.00	0.00	0.00		0.00
		-25.34	L	-19.50	152.00	0.0	0.00	0.00	0.00		0.00
OPER	5C1	96.04	R	73.88	238.50	0.0	0.00	0.00	0.00		0.00
		-36.40	L	-28.00	156.50	0.0	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	2F1	-8.88	8.87	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.14	11.13	-8.57	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	7.99	0.00	0.00	0.00	0.00
OPER	5C1	-12.19	12.22	-9.37	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.79	4.77	HS 95.48	171.9
HS20	7.98	7.96	HS 159.13	286.4
2F1	13.13	13.09	0.00	196.4
3F1	10.47	10.44	0.00	240.1
4F1	11.21	11.18	0.00	301.9
5C1	9.56	9.51	0.00	380.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00			
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00			
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00			
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00			
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	2F1	-11.58	6.32	-8.91	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-15.00	6.46	-11.54	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.68	-11.51	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.69	6.83	HS 73.75	132.8
HS20	6.15	11.38	HS 122.92	221.3
2F1	9.91	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.8
4F1	7.65	18.26	0.00	206.5
5C1	7.66	12.19	0.00	306.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00	
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00	
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00	
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00	
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00			
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00			
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00			
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00			
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.0	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	2F1	-14.31	4.01	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.06	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.99	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.57	HS 59.26	106.7
HS20	4.94	15.95	HS 98.76	177.8
2F1	7.90	29.82	0.00	118.5
3F1	5.93	27.39	0.00	136.4
4F1	5.80	34.18	0.00	156.7
5C1	6.16	16.27	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00	
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00	
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00	
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00	
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1	3.31	7.21	3.31	7.21	0.00	132.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00			
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00			
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00			
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00			
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	2F1	-16.97	2.26	-13.06	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.25	-17.78	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.72	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.65	HS 47.27	85.1
HS20	3.94	24.41	HS 78.78	141.8
2F1	6.56	53.82	0.00	98.4
3F1	4.82	37.41	0.00	110.8
4F1	4.70	34.67	0.00	126.8
5C1	5.08	22.95	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1 4.54 6.28 4.54 6.28 0.00 181.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400	top	bott	9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00		187.50	
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00		187.50	
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00		0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00		0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00		0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00		0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.64	2.34	5.97	2.63	HS 46.78	84.2
HS20	11.07	3.90	9.95	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.3	-109.7	123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	2F1	-19.45	2.26	-14.97	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.25	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	3.52	-19.59	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.56	HS 39.26	70.7
HS20	3.27	34.26	HS 65.44	117.8
2F1	5.64	54.57	0.00	84.5
3F1	4.06	37.93	0.00	93.4
4F1	3.92	35.02	0.00	105.7
5C1	4.31	34.94	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 8.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.44	6.20	2.44	HS 48.76	87.8
HS20	10.32	4.06	10.32	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00		0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00		0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00		0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00		0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.1	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	2F1	-19.45	21.63	-14.97	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.54	-20.77	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.28	-21.54	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	28.86	-19.59	22.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00		0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00		0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00		0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00		0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.7	7.3

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	2F1	-21.64	21.63	-16.65	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.54	-23.52	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.28	-24.87	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-28.84	28.86	-22.18	22.20	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.0	19.76	0.400		9.86	8.24	8.24	0.62	1.77
				9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00			
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00			
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00			
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00			
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.57	2.32	5.91	2.61	HS 46.38	83.5
HS20	10.95	3.87	9.84	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

9.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.0
OPER	151.3	-122.7	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	2F1	-2.53	19.43	-1.95	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	26.96	-2.80	20.74	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	27.94	-3.02	21.49	0.00	0.00	0.00	0.00
OPER	5C1	-3.90	25.45	-3.00	19.58	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.18	1.97	HS 39.46	71.0
HS20	30.30	3.29	HS 65.77	118.4
2F1	48.44	5.66	0.00	84.9
3F1	33.68	4.08	0.00	93.9
4F1	31.27	3.94	0.00	106.3
5C1	31.51	4.32	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	190.00	212.50
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	190.00	212.50
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.13	2.42	6.13	2.42	HS 48.34	87.0
HS20	10.21	4.03	10.21	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1 9.37 5.08 9.37 5.08 0.00 203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00			
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00			
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

9.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.6	67.0
OPER	151.3	-121.1	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	2F1	-2.53	16.94	-1.95	13.03	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	23.05	-2.80	17.73	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	23.67	-3.02	18.20	0.00	0.00	0.00	0.00
OPER	5C1	-5.87	21.87	-4.52	16.82	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.38	2.38	HS 47.54	85.6
HS20	23.97	3.96	HS 79.23	142.6
2F1	47.78	6.59	0.00	98.9
3F1	33.22	4.84	0.00	111.4
4F1	30.84	4.72	0.00	127.4
5C1	20.61	5.11	0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00	
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00	
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.7
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00			
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00			
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00			
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00			
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	3.94	1.63	4.39	HS 32.55	58.6
HS20	3.05	6.57	2.71	7.32	HS 54.25	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.6	68.0
OPER	151.3	-119.4	113.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	2F1	-4.03	14.27	-3.10	10.98	0.00	0.00	0.00	0.00
OPER	3F1	-4.39	18.99	-3.38	14.61	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	19.42	-3.02	14.94	0.00	0.00	0.00	0.00
OPER	5C1	-8.12	18.31	-6.25	14.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.43	2.98	HS 59.62	107.3
HS20	15.72	4.97	HS 99.36	178.9
2F1	29.58	7.95	0.00	119.2
3F1	27.18	5.97	0.00	137.3
4F1	30.41	5.84	0.00	157.6
5C1	14.70	6.19	0.00	247.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00	
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00	
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00	
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00	
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.1	12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17	R	82.44	238.00	0.0	84.82	65.25	210.00		
		-33.53	L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00	
OPER	HS20	107.17	R	82.44	238.00	0.0	84.82	65.25	210.00		
		-33.53	L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00	
OPER	2F1	73.61	R	56.63	220.00	0.0	0.00	0.00	0.00		
		-21.85	L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	94.23	R	72.48	220.00	0.0	0.00	0.00	0.00		
		-31.43	L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	101.08	R	77.76	224.00	0.0	0.00	0.00	0.00		
		-34.05	L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	93.21	R	71.70	222.00	0.0	0.00	0.00	0.00		
		-37.97	L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS 28.53	51.3
HS20	2.68	8.43	2.38	9.38	HS 47.54	85.6
2F1	3.89	12.93	3.46	14.40	0.00	51.9
3F1	3.04	8.99	2.70	10.01	0.00	62.2
4F1	2.84	8.30	2.52	9.24	0.00	68.0
5C1	3.08	7.44	2.73	8.28	0.00	109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.1	0.0	1.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	2F1	-6.35	11.53	-4.89	8.87	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	14.95	-5.84	11.50	0.00	0.00	0.00	0.00
OPER	4F1	-6.49	14.93	-4.99	11.48	0.00	0.00	0.00	0.00
OPER	5C1	-10.51	14.92	-8.09	11.48	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.75	3.70	HS 74.08	133.4
HS20	11.24	6.17	HS 123.47	222.3
2F1	18.52	9.98	0.00	149.7
3F1	15.50	7.70	0.00	177.0
4F1	18.12	7.71	0.00	208.2
5C1	11.19	7.71	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.17	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	HS20	107.17	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	2F1	73.61	56.63	220.00	0.0	0.00	0.00	0.00	
		-21.85	-16.81	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23	72.48	220.00	0.0	0.00	0.00	0.00	
		-31.43	-24.18	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08	77.76	224.00	0.0	0.00	0.00	0.00	
		-34.05	-26.19	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21	71.70	222.00	0.0	0.00	0.00	0.00	
		-37.97	-29.21	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400	top	bott	9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.2	13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00		0.00
OPER	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00		0.00
OPER	2F1	74.76	L	57.51	202.50	0.0	0.00	0.00	0.00		
		-18.29	R	-14.07	242.50	0.0	0.00	0.00	0.00		0.00
OPER	3F1	99.90	R	76.84	222.50	0.0	0.00	0.00	0.00		
		-26.30	R	-20.23	245.00	0.0	0.00	0.00	0.00		0.00
OPER	4F1	104.34	L	80.26	198.50	0.0	0.00	0.00	0.00		
		-28.43	R	-21.87	248.00	0.0	0.00	0.00	0.00		0.00
OPER	5C1	95.34	L	73.34	161.50	0.0	0.00	0.00	0.00		
		-38.29	R	-29.45	243.50	0.0	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.63	5.60	1.45	6.24	HS 28.98	52.2
HS20	2.72	9.34	2.41	10.39	HS 48.31	87.0
2F1	3.82	15.51	3.39	17.26	0.00	50.9
3F1	2.86	10.79	2.54	12.00	0.00	58.4
4F1	2.74	9.98	2.43	11.10	0.00	65.6
5C1	2.99	7.41	2.66	8.24	0.00	106.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-0.4	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	2F1	-8.91	8.83	-6.86	6.80	0.00	0.00	0.00	0.00
OPER	3F1	-11.18	11.07	-8.60	8.52	0.00	0.00	0.00	0.00
OPER	4F1	-10.46	10.32	-8.04	7.94	0.00	0.00	0.00	0.00
OPER	5C1	-12.98	12.17	-9.99	9.36	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.70	4.81	HS 94.10	169.4
HS20	7.84	8.02	HS 156.83	282.3
2F1	13.01	13.22	0.00	195.2
3F1	10.37	10.55	0.00	238.5
4F1	11.09	11.31	0.00	299.5
5C1	8.93	9.60	0.00	357.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	2F1	74.76 L	57.51	202.50	0.0	0.00	0.00	0.00	
		-18.29 R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 R	76.84	222.50	0.0	0.00	0.00	0.00	
		-26.30 R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 L	80.26	198.50	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 L	73.34	161.50	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.600 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
0.8 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00			
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00			
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00			
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.2
OPER	151.3	-114.2	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	2F1	-11.62	6.29	-8.94	4.84	0.00	0.00	0.00	0.00
OPER	3F1	-15.07	7.48	-11.59	5.75	0.00	0.00	0.00	0.00
OPER	4F1	-15.06	6.33	-11.58	4.87	0.00	0.00	0.00	0.00
OPER	5C1	-15.45	9.64	-11.88	7.41	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.62	7.08	HS 72.45	130.4
HS20	6.04	11.81	HS 120.75	217.4
2F1	9.82	18.86	0.00	147.4
3F1	7.58	15.86	0.00	174.2
4F1	7.58	18.75	0.00	204.7
5C1	7.39	12.31	0.00	295.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00	
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00	
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.700 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
0.1 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00			
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00			
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00			
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00			
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

9.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.5	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	2F1	-14.36	3.98	-11.04	3.06	0.00	0.00	0.00	0.00
OPER	3F1	-19.12	4.27	-14.71	3.28	0.00	0.00	0.00	0.00
OPER	4F1	-19.55	3.52	-15.04	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-18.72	7.32	-14.40	5.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.93	10.04	HS 58.69	105.6
HS20	4.89	16.74	HS 97.81	176.1
2F1	7.83	30.24	0.00	117.5
3F1	5.88	28.18	0.00	135.3
4F1	5.75	34.18	0.00	155.3
5C1	6.01	16.43	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00	
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00	
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00	
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00	
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00			
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00			
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00			
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00			
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.86	0.00	208.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	0.0
-0.5	-5.1		

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	2F1	-17.02	2.27	-13.09	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.17	3.26	-17.82	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-23.81	3.52	-18.32	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-22.39	5.27	-17.22	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.34	15.69	HS 46.80	84.2
HS20	3.90	26.15	HS 77.99	140.4
2F1	6.51	53.80	0.00	97.6
3F1	4.78	37.40	0.00	109.9
4F1	4.65	34.66	0.00	125.6
5C1	4.95	23.13	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00	
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00	
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00	
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00	
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1

5.56

5.44

5.56

5.44

0.00

217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00			
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00			
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00			
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00			
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.94	7.49	2.19	HS 38.82	69.9
HS20	13.85	3.23	12.49	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

9.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.7	-6.6	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	2F1	-19.49	2.27	-14.99	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	3.26	-20.81	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	3.53	-21.59	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	3.52	-20.15	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.94	21.33	HS 38.87	70.0
HS20	3.24	35.55	HS 64.78	116.6
2F1	5.60	54.55	0.00	84.0
3F1	4.03	37.92	0.00	92.7
4F1	3.89	35.01	0.00	104.9
5C1	4.16	35.13	0.00	166.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 9.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.6 -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00	
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00	
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00	
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00	
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.77	2.03	7.77	2.03	HS 40.53	73.0
HS20	12.94	3.38	12.94	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-6.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	2F1	-19.49	22.27	-14.99	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	31.91	-20.81	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	34.28	-21.59	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	30.41	-20.15	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.2	19.76	0.460		9.86	8.30	8.30	0.74	1.81
				9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	118.099

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-8.1	9.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	2F1	-21.66	22.27	-16.66	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-30.61	31.91	-23.54	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-32.38	34.28	-24.91	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-29.69	30.41	-22.84	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00			
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00			
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00			
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00			
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	2.60	7.62	2.95	HS 51.97	93.5
HS20	14.20	4.33	12.70	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.84	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.9	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.7	74.2
OPER	172.1	-141.1	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	2F1	-0.49	20.47	-0.37	15.74	0.00	0.00	0.00	0.00
OPER	3F1	-0.70	28.87	-0.54	22.21	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	30.41	-0.58	23.39	0.00	0.00	0.00	0.00
OPER	5C1	-1.11	27.42	-0.85	21.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	56.69	2.04	HS 40.77	73.4
HS20	94.49	3.40	HS 67.94	122.3
2F1	290.18	6.04	0.00	90.6
3F1	201.70	4.28	0.00	98.5
4F1	186.92	4.07	0.00	109.8
5C1	126.98	4.51	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00	
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00	
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00	
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.91	2.71	7.91	2.71	HS 54.19	97.5
HS20	13.18	4.52	13.18	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1 10.77 5.39 10.77 5.39 0.00 215.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00			
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00			
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00			
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00			
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.6	75.2
OPER	172.1	-139.4	125.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	2F1	-1.56	18.38	-1.20	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.30	25.44	-1.00	19.57	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	26.13	-0.58	20.10	0.00	0.00	0.00	0.00
OPER	5C1	-2.80	24.15	-2.15	18.58	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.56	2.40	HS 47.91	86.2
HS20	44.27	3.99	HS 79.85	143.7
2F1	89.07	6.82	0.00	102.3
3F1	107.27	4.93	0.00	113.3
4F1	184.64	4.80	0.00	129.6
5C1	49.75	5.19	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.7	12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00		165.00	
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00		165.00	
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00		0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00		0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00		0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00		0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.6	76.3
OPER	172.1	-137.7	127.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	2F1	-3.16	16.05	-2.43	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.43	21.68	-2.64	16.68	0.00	0.00	0.00	0.00
OPER	4F1	-2.52	22.18	-1.94	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.78	20.67	-3.68	15.90	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.00	2.94	HS 58.80	105.8
HS20	26.67	4.90	HS 98.00	176.4
2F1	43.52	7.92	0.00	118.7
3F1	40.11	5.86	0.00	134.8
4F1	54.68	5.73	0.00	154.7
5C1	28.80	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
Check Point I. D. 10.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	215.00	165.00
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	215.00	165.00
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.72	4.27	1.72	4.27	HS 34.41	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1

3.52

8.03

3.52

8.03

0.00

140.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.6	77.3
OPER	172.1	-135.9	128.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	2F1	-5.06	13.52	-3.89	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-6.00	17.64	-4.62	13.57	0.00	0.00	0.00	0.00
OPER	4F1	-5.13	18.09	-3.94	13.92	0.00	0.00	0.00	0.00
OPER	5C1	-6.97	17.52	-5.36	13.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.82	HS 76.34	137.4
HS20	18.10	6.36	HS 127.23	229.0
2F1	26.87	9.53	0.00	142.9
3F1	22.64	7.30	0.00	167.9
4F1	26.51	7.12	0.00	192.2
5C1	19.49	7.35	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00			
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00			
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00			
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00			
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.46	6.06	1.28	6.76	HS 25.52	45.9
HS20	2.42	10.11	2.13	11.26	HS 42.53	76.6
2F1	3.55	15.51	3.11	17.28	0.00	46.7
3F1	2.60	10.78	2.28	12.01	0.00	52.5
4F1	2.45	9.95	2.14	11.09	0.00	57.9
5C1	2.73	11.41	2.39	12.72	0.00	95.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-80.5	78.3
OPER	172.1	-134.2	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	2F1	-7.23	10.81	-5.56	8.32	0.00	0.00	0.00	0.00
OPER	3F1	-9.00	14.12	-6.92	10.86	0.00	0.00	0.00	0.00
OPER	4F1	-8.23	14.21	-6.33	10.93	0.00	0.00	0.00	0.00
OPER	5C1	-9.33	14.97	-7.18	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.46	4.67	HS 93.42	168.2
HS20	12.43	7.78	HS 155.70	280.3
2F1	18.56	12.07	0.00	181.1
3F1	14.92	9.24	0.00	212.6
4F1	16.30	9.19	0.00	248.1
5C1	14.39	8.72	0.00	348.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00			
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00			
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00			
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00			
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	2F1	-9.63	7.97	-7.41	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-12.38	10.92	-9.53	8.40	0.00	0.00	0.00	0.00
OPER	4F1	-12.28	10.15	-9.44	7.81	0.00	0.00	0.00	0.00
OPER	5C1	-12.15	12.27	-9.35	9.44	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.55	6.22	HS 110.98	199.8
HS20	9.25	10.38	HS 184.96	332.9
2F1	13.74	16.60	0.00	206.1
3F1	10.69	12.12	0.00	245.9
4F1	10.78	13.05	0.00	291.1
5C1	10.89	10.79	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00	
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00	
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00	
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00	
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83	R	109.87	256.50	0.0	101.42	78.01	242.50		
		-20.88	L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00	
OPER	HS20	142.83	R	109.87	256.50	0.0	101.42	78.01	242.50		
		-20.88	L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00	
OPER	2F1	91.71	L	70.54	232.50	0.0	0.00	0.00	0.00		
		-13.61	L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	120.84	L	92.95	228.50	0.0	0.00	0.00	0.00		
		-19.58	L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	126.12	L	97.01	228.50	0.0	0.00	0.00	0.00		
		-21.21	L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	116.99	L	89.99	226.50	0.0	0.00	0.00	0.00		
		-18.50	L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.6	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	2F1	-12.23	6.07	-9.41	4.67	0.00	0.00	0.00	0.00
OPER	3F1	-16.11	7.59	-12.39	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.89	6.25	-12.22	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.60	9.40	-12.00	7.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.12	8.29	HS 82.32	148.2
HS20	6.86	13.82	HS 137.20	247.0
2F1	10.69	22.11	0.00	160.3
3F1	8.11	17.66	0.00	186.5
4F1	8.22	21.45	0.00	222.0
5C1	8.38	14.27	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00	
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00	
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00	
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00	
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00			
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00			
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00			
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00			
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.65	14.88	1.45	16.62	HS 29.08	52.3
HS20	2.76	24.80	2.42	27.69	HS 48.47	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-3.1	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.4	81.5
OPER	172.1	-128.9	135.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	2F1	-14.98	4.08	-11.52	3.14	0.00	0.00	0.00	0.00
OPER	3F1	-20.12	4.17	-15.48	3.21	0.00	0.00	0.00	0.00
OPER	4F1	-20.19	3.43	-15.53	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-19.51	6.32	-15.01	4.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.19	12.47	HS 63.86	114.9
HS20	5.32	20.78	HS 106.43	191.6
2F1	8.61	33.25	0.00	129.1
3F1	6.41	32.57	0.00	147.3
4F1	6.39	39.55	0.00	172.4
5C1	6.61	21.49	0.00	264.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00	
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00	
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00	
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00	
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 10.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00			
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00			
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00			
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00			
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.24	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-4.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.5
OPER	172.1	-127.2	137.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	2F1	-17.86	2.05	-13.74	1.58	0.00	0.00	0.00	0.00
OPER	3F1	-24.36	2.61	-18.74	2.01	0.00	0.00	0.00	0.00
OPER	4F1	-24.90	2.82	-19.16	2.17	0.00	0.00	0.00	0.00
OPER	5C1	-23.66	4.11	-18.20	3.16	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.56	23.44	HS 51.25	92.3
HS20	4.27	39.06	HS 85.42	153.8
2F1	7.12	66.95	0.00	106.9
3F1	5.22	52.68	0.00	120.1
4F1	5.11	48.82	0.00	137.9
5C1	5.38	33.50	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00	0.00
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00	0.00
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00	0.00
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00	0.00
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1

5.36

56.32

5.36

56.32

0.00

214.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.3	79.9
OPER	172.1	-125.5	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	2F1	-20.82	0.00	-16.01	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.77	0.00	-22.13	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.87	0.00	-22.97	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.99	0.00	-21.53	0.00	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.11	30.37	HS 42.26	76.1
HS20	3.52	50.62	HS 70.43	126.8
2F1	6.03	999.00	0.00	90.4
3F1	4.36	999.00	0.00	100.3
4F1	4.20	999.00	0.00	113.4
5C1	4.48	999.00	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.272

Second Live Load Dist. Factor 1.272

Comments:

Member I. D. S03 Symmetry:

Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5
	25.000	25.000	25.000	25.000	25.000
	Span 6	Span 7	Span 8	Span 9	Span 10
	25.000	25.000	25.000	25.000	25.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	25.000	1	0		0.0	0.0
2	1	25.000	2	0		0.0	0.0
3	1	25.000	2	0		0.0	0.0
4	1	25.000	2	0		0.0	0.0
5	1	25.000	2	0		0.0	0.0
6	1	25.000	2	0		0.0	0.0
7	1	25.000	2	0		0.0	0.0
8	1	25.000	2	0		0.0	0.0
9	1	25.000	2	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	688.0	688.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	688.0	688.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	688.0	688.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	688.0	688.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	688.0	688.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	688.0	688.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	688.0	688.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	688.0	688.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	688.0	688.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	688.0	688.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.000

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.0	74.9
OPER	172.1	-140.0	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	2F1	-1.81	20.82	-1.40	16.01	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	28.77	-2.01	22.13	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	29.87	-2.17	22.97	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	27.99	-1.77	21.53	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.49	2.10	HS 42.01	75.6
HS20	52.48	3.50	HS 70.02	126.0
2F1	77.14	5.99	0.00	89.9
3F1	53.62	4.34	0.00	99.7
4F1	49.69	4.18	0.00	112.8
5C1	60.91	4.46	0.00	178.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 1.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00			
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00			
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00			
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00			
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.76	28.97	2.44	32.44	HS 48.80	87.8
HS20	4.61	48.28	4.07	54.07	HS 81.33	146.4
2F1	7.68	74.08	6.78	82.96	0.00	101.7
3F1	5.63	51.49	4.97	57.66	0.00	114.3
4F1	5.51	47.55	4.86	53.24	0.00	131.3
5C1	5.80	54.50	5.12	61.03	0.00	204.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	76.0
OPER	172.1	-138.1	126.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	2F1	-2.05	17.86	-1.58	13.74	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	24.36	-2.01	18.74	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	24.90	-2.17	19.16	0.00	0.00	0.00	0.00
OPER	5C1	-4.11	23.66	-3.16	18.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.53	2.55	HS 51.03	91.9
HS20	39.22	4.25	HS 85.06	153.1
2F1	67.21	7.09	0.00	106.4
3F1	52.89	5.20	0.00	119.6
4F1	49.02	5.09	0.00	137.3
5C1	33.63	5.35	0.00	214.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00	0.00
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00	0.00
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00	0.00
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00	0.00
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	30.07	2.54	30.07	HS 50.85	91.5
HS20	4.24	50.12	4.24	50.12	HS 84.76	152.6
2F1	7.07	76.90	7.07	76.90	0.00	106.0
3F1	5.18	53.45	5.18	53.45	0.00	119.2
4F1	5.07	49.35	5.07	49.35	0.00	136.8

5C1

5.33

56.58

5.33

56.58

0.00

213.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00			
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00			
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00			
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00			
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.64	15.00	1.44	16.73	HS 28.81	51.9
HS20	2.73	25.00	2.40	27.89	HS 48.02	86.4
2F1	4.42	38.35	3.88	42.79	0.00	58.2
3F1	3.29	26.66	2.89	29.74	0.00	66.5
4F1	3.28	24.61	2.88	27.46	0.00	77.8
5C1	3.39	28.22	2.98	31.48	0.00	119.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.7	77.1
OPER	172.1	-136.2	128.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	2F1	-4.08	14.98	-3.14	11.52	0.00	0.00	0.00	0.00
OPER	3F1	-4.17	20.12	-3.21	15.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.43	20.19	-2.64	15.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	19.51	-4.86	15.01	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.50	3.18	HS 63.68	114.6
HS20	20.84	5.31	HS 106.13	191.0
2F1	33.34	8.58	0.00	128.7
3F1	32.65	6.39	0.00	146.9
4F1	39.65	6.37	0.00	171.9
5C1	21.55	6.59	0.00	263.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00	
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00	
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00	
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00	
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	15.55	1.50	15.55	HS 30.08	54.1
HS20	2.51	25.91	2.51	25.91	HS 50.13	90.2
2F1	4.05	39.76	4.05	39.76	0.00	60.8
3F1	3.02	27.64	3.02	27.64	0.00	69.4
4F1	3.01	25.52	3.01	25.52	0.00	81.2

5C1	3.11	29.25	3.11	29.25	0.00	124.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00			
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00			
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00			
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00			
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.36	10.20	1.19	11.36	HS 23.84	42.9
HS20	2.27	17.01	1.99	18.93	HS 39.73	71.5
2F1	3.53	26.09	3.09	29.05	0.00	46.4
3F1	2.68	18.14	2.35	20.19	0.00	54.0
4F1	2.57	16.75	2.25	18.65	0.00	60.7
5C1	2.77	19.20	2.42	21.37	0.00	97.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.6	78.3
OPER	172.1	-134.3	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	2F1	-6.07	12.23	-4.67	9.41	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	16.11	-5.84	12.39	0.00	0.00	0.00	0.00
OPER	4F1	-6.25	15.89	-4.81	12.22	0.00	0.00	0.00	0.00
OPER	5C1	-9.40	15.60	-7.23	12.00	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.30	4.11	HS 82.21	148.0
HS20	13.83	6.85	HS 137.01	246.6
2F1	22.14	10.67	0.00	160.1
3F1	17.68	8.10	0.00	186.2
4F1	21.47	8.21	0.00	221.7
5C1	14.29	8.36	0.00	334.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00	
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00	
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00	
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00	
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	10.57	1.25	10.57	HS 24.91	44.8
HS20	2.08	17.62	2.08	17.62	HS 41.52	74.7
2F1	3.23	27.03	3.23	27.03	0.00	48.5
3F1	2.45	18.79	2.45	18.79	0.00	56.4
4F1	2.35	17.35	2.35	17.35	0.00	63.5

5C1	2.53	19.89	2.53	19.89	0.00	101.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00			
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00			
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00			
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00			
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.35	7.70	1.18	8.57	HS 23.59	42.5
HS20	2.25	12.84	1.97	14.29	HS 39.31	70.8
2F1	3.34	19.70	2.92	21.92	0.00	43.8
3F1	2.50	13.69	2.19	15.24	0.00	50.4
4F1	2.34	12.64	2.04	14.07	0.00	55.2
5C1	2.62	14.49	2.29	16.13	0.00	91.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	2F1	-7.97	9.63	-6.13	7.41	0.00	0.00	0.00	0.00
OPER	3F1	-10.92	12.38	-8.40	9.53	0.00	0.00	0.00	0.00
OPER	4F1	-10.15	11.80	-7.81	9.08	0.00	0.00	0.00	0.00
OPER	5C1	-12.27	12.15	-9.44	9.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.22	5.55	HS 110.98	199.8
HS20	10.37	9.25	HS 184.97	332.9
2F1	16.60	13.74	0.00	206.2
3F1	12.12	10.69	0.00	245.9
4F1	13.05	11.22	0.00	302.9
5C1	10.79	10.89	0.00	431.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00	
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00	
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00	
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00	
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.23	7.98	1.23	7.98	HS 24.66	44.4
HS20	2.06	13.30	2.06	13.30	HS 41.10	74.0
2F1	3.05	20.41	3.05	20.41	0.00	45.8
3F1	2.29	14.18	2.29	14.18	0.00	52.6
4F1	2.14	13.10	2.14	13.10	0.00	57.7

5C1	2.39	15.01	2.39	15.01	0.00	95.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00			
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00			
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00			
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00			
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.44	6.12	1.26	6.82	HS 25.22	45.4
HS20	2.40	10.20	2.10	11.36	HS 42.03	75.7
2F1	3.51	15.66	3.08	17.43	0.00	46.2
3F1	2.58	10.88	2.26	12.12	0.00	51.9
4F1	2.42	10.05	2.12	11.19	0.00	57.2
5C1	2.70	11.52	2.36	12.82	0.00	94.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-1.8	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	2F1	-10.81	7.23	-8.32	5.56	0.00	0.00	0.00	0.00
OPER	3F1	-14.12	9.00	-10.86	6.92	0.00	0.00	0.00	0.00
OPER	4F1	-14.21	8.23	-10.93	6.33	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.33	-11.52	7.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.67	7.46	HS 93.38	168.1
HS20	7.78	12.43	HS 155.63	280.1
2F1	12.06	18.57	0.00	181.0
3F1	9.24	14.93	0.00	212.5
4F1	9.18	16.31	0.00	248.0
5C1	8.71	14.40	0.00	348.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00	
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00	
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00	
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00	
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.32	6.34	1.32	6.34	HS 26.36	47.4
HS20	2.20	10.57	2.20	10.57	HS 43.93	79.1
2F1	3.22	16.22	3.22	16.22	0.00	48.2
3F1	2.36	11.27	2.36	11.27	0.00	54.2
4F1	2.21	10.41	2.21	10.41	0.00	59.8

5C1	2.47	11.93	2.47	11.93	0.00	98.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00			
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00			
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00			
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00			
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	4.99	1.36	5.57	HS 27.26	49.1
HS20	2.59	8.32	2.27	9.29	HS 45.44	81.8
2F1	3.83	12.77	3.36	14.25	0.00	50.4
3F1	2.97	8.88	2.61	9.91	0.00	60.0
4F1	2.77	8.20	2.43	9.15	0.00	65.6
5C1	3.02	9.40	2.65	10.49	0.00	106.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.4 -3.6 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.1	81.8
OPER	172.1	-128.4	136.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	2F1	-13.52	5.06	-10.40	3.89	0.00	0.00	0.00	0.00
OPER	3F1	-17.64	6.00	-13.57	4.62	0.00	0.00	0.00	0.00
OPER	4F1	-18.09	5.13	-13.92	3.94	0.00	0.00	0.00	0.00
OPER	5C1	-17.52	6.97	-13.48	5.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.81	10.89	HS 76.12	137.0
HS20	6.34	18.15	HS 126.87	228.4
2F1	9.50	26.94	0.00	142.5
3F1	7.28	22.70	0.00	167.4
4F1	7.10	26.58	0.00	191.7
5C1	7.33	19.54	0.00	293.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.42	5.18	1.42	5.18	HS 28.46	51.2
HS20	2.37	8.63	2.37	8.63	HS 47.43	85.4
2F1	3.51	13.24	3.51	13.24	0.00	52.6
3F1	2.72	9.20	2.72	9.20	0.00	62.6
4F1	2.54	8.50	2.54	8.50	0.00	68.5

5C1	2.77	9.74	2.77	9.74	0.00	110.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.700
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00			
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00			
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00			
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.13	1.64	4.63	HS 32.87	59.2
HS20	3.10	6.89	2.74	7.71	HS 54.78	98.6
2F1	4.88	10.56	4.31	11.83	0.00	64.6
3F1	3.78	7.34	3.33	8.22	0.00	76.6
4F1	3.68	6.78	3.25	7.59	0.00	87.8
5C1	3.81	7.77	3.36	8.70	0.00	134.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.5 -5.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.9	82.9
OPER	172.1	-126.5	138.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	2F1	-16.05	3.16	-12.35	2.43	0.00	0.00	0.00	0.00
OPER	3F1	-21.68	3.43	-16.68	2.64	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.52	-17.06	1.94	0.00	0.00	0.00	0.00
OPER	5C1	-20.67	4.78	-15.90	3.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.93	16.07	HS 58.55	105.4
HS20	4.88	26.78	HS 97.58	175.6
2F1	7.88	43.69	0.00	118.2
3F1	5.84	40.27	0.00	134.2
4F1	5.71	54.90	0.00	154.1
5C1	6.12	28.92	0.00	244.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00	
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00	
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00	
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	4.29	1.71	4.29	HS 34.25	61.7
HS20	2.85	7.15	2.85	7.15	HS 57.09	102.8
2F1	4.49	10.97	4.49	10.97	0.00	67.3
3F1	3.47	7.62	3.47	7.62	0.00	79.9
4F1	3.39	7.04	3.39	7.04	0.00	91.4

5C1 3.51 8.07 3.51 8.07 0.00 140.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00			
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00			
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00			
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00			
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 54.00	97.2
HS20	5.07	5.72	4.50	6.44	HS 90.00	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	130.0
4F1	6.81	5.63	6.05	6.34	0.00	152.1
5C1	5.53	6.46	4.92	7.27	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.8	84.1
OPER	172.1	-124.6	140.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	2F1	-18.38	1.56	-14.14	1.20	0.00	0.00	0.00	0.00
OPER	3F1	-25.44	1.30	-19.57	1.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.13	0.75	-20.10	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-24.15	2.80	-18.58	2.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	26.70	HS 47.63	85.7
HS20	3.97	44.51	HS 79.38	142.9
2F1	6.78	89.54	0.00	101.7
3F1	4.90	107.84	0.00	112.7
4F1	4.77	185.62	0.00	128.8
5C1	5.16	50.01	0.00	206.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00	
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00	
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00	
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00	
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.16	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.59	168.5
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.34	5.88	6.34	0.00	135.2
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00			
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00			
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00			
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.73	2.58	7.81	2.93	HS 51.60	92.9
HS20	14.55	4.30	13.02	4.88	HS 85.99	154.8
2F1	25.70	7.27	22.99	8.26	0.00	109.0
3F1	24.29	5.05	21.73	5.74	0.00	116.2
4F1	22.75	4.66	20.36	5.30	0.00	126.0
5C1	11.68	5.13	10.45	5.82	0.00	205.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.9	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-73.6	85.2
OPER	172.1	-122.7	142.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	2F1	-20.47	0.49	-15.74	0.37	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	0.70	-22.21	0.54	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	0.75	-23.39	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	1.11	-21.09	0.85	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.02	57.06	HS 40.46	72.8
HS20	3.37	95.10	HS 67.44	121.4
2F1	6.00	292.07	0.00	89.9
3F1	4.25	203.01	0.00	97.8
4F1	4.04	188.14	0.00	109.0
5C1	4.48	127.80	0.00	179.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00	
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00	
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00	
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.10	2.69	8.10	2.69	HS 53.82	96.9
HS20	13.50	4.49	13.50	4.49	HS 89.69	161.5
2F1	23.85	7.58	23.85	7.58	0.00	113.7
3F1	22.55	5.27	22.55	5.27	0.00	121.2
4F1	21.12	4.87	21.12	4.87	0.00	131.4

5C1 10.84 5.35 10.84 5.35 0.00 213.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.25	1.14	10.22	1.30	HS 22.77	41.0
HS20	18.75	1.90	17.04	2.17	HS 37.95	68.3
2F1	28.77	4.39	26.14	5.03	0.00	65.9
3F1	20.00	2.93	18.17	3.36	0.00	67.5
4F1	18.47	2.43	16.78	2.79	0.00	65.7
5C1	24.15	2.68	21.94	3.07	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	2F1	-20.47	21.85	-15.74	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	30.77	-22.21	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	32.52	-23.39	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	29.85	-21.09	22.96	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.77	1.64	HS 32.83	59.1
HS20	2.96	2.74	HS 54.71	98.5
2F1	5.43	4.87	0.00	73.0
3F1	3.79	3.46	0.00	79.5
4F1	3.52	3.27	0.00	88.4
5C1	3.97	3.57	0.00	142.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.57	1.19	10.57	1.19	HS 23.89	43.0
HS20	17.61	1.99	17.61	1.99	HS 39.81	71.7
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	83.109

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.25	1.14	10.22	1.30	HS 22.77	41.0
HS20	18.75	1.90	17.04	2.17	HS 37.95	68.3
2F1	28.77	4.39	26.14	5.03	0.00	65.9
3F1	20.00	2.93	18.17	3.36	0.00	67.5
4F1	18.47	2.43	16.78	2.79	0.00	65.7
5C1	24.15	2.68	21.94	3.07	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-10.4	9.1

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	2F1	-22.27	21.85	-17.13	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-31.91	30.77	-24.55	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-34.28	32.52	-26.37	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-30.41	29.85	-23.39	22.96	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.77	1.64	HS 32.83	59.1
HS20	2.96	2.74	HS 54.71	98.5
2F1	5.43	4.87	0.00	73.0
3F1	3.79	3.46	0.00	79.5
4F1	3.52	3.27	0.00	88.4
5C1	3.97	3.57	0.00	142.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.57	1.19	10.57	1.19	HS 23.89	43.0
HS20	17.61	1.99	17.61	1.99	HS 39.81	71.7
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	0.00		
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	0.00		
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	0.00		
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	0.00		
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	8.21	1.92	7.41	2.17	HS 38.42	69.2
HS20	13.68	3.20	12.34	3.62	HS 64.04	115.3
2F1	22.71	5.55	20.49	6.28	0.00	83.2
3F1	30.66	3.86	27.66	4.37	0.00	88.7
4F1	32.84	3.57	29.63	4.04	0.00	96.3
5C1	13.67	3.95	12.34	4.48	0.00	158.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.7	65.0
OPER	151.3	-124.4	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	2F1	-2.27	19.49	-1.74	14.99	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	27.06	-2.51	20.81	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	28.06	-2.71	21.59	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	26.19	-2.71	20.15	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.40	1.93	HS 38.59	69.5
HS20	37.33	3.22	HS 64.32	115.8
2F1	54.89	5.56	0.00	83.4
3F1	38.16	4.00	0.00	92.1
4F1	35.36	3.86	0.00	104.2
5C1	35.35	4.14	0.00	165.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 151.7	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
OPER 252.8	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.68	2.01	7.68	2.01	HS 40.13	72.2
HS20	12.79	3.34	12.79	3.34	HS 66.88	120.4
2F1	21.24	5.80	21.24	5.80	0.00	86.9
3F1	28.67	4.03	28.67	4.03	0.00	92.7
4F1	30.71	3.73	30.71	3.73	0.00	100.6

5C1	12.78	4.13	12.78	4.13	0.00	165.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00			
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00			
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00			
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00			
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.85	2.52	2.56	2.83	HS 50.35	90.6
HS20	4.75	4.20	4.26	4.71	HS 83.91	151.0
2F1	7.35	6.97	6.59	7.83	0.00	98.9
3F1	6.05	4.84	5.43	5.44	0.00	111.4
4F1	6.57	4.48	5.89	5.03	0.00	121.0
5C1	5.99	5.21	5.37	5.85	0.00	208.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

2.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5

0.0

5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	2F1	-2.27	17.02	-1.74	13.09	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	23.17	-2.51	17.82	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	23.81	-2.71	18.32	0.00	0.00	0.00	0.00
OPER	5C1	-5.27	22.39	-4.06	17.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.76	2.33	HS 46.55	83.8
HS20	26.27	3.88	HS 77.58	139.6
2F1	54.06	6.47	0.00	97.1
3F1	37.58	4.76	0.00	109.4
4F1	34.83	4.63	0.00	124.9
5C1	23.24	4.92	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00	
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00	
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00	
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00	
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.66	2.62	2.66	2.62	HS 52.43	94.4
HS20	4.43	4.37	4.43	4.37	HS 87.38	157.3
2F1	6.85	7.26	6.85	7.26	0.00	102.7
3F1	5.64	5.05	5.64	5.05	0.00	116.1
4F1	6.12	4.67	6.12	4.67	0.00	126.0

5C1

5.58

5.43

5.58

5.43

0.00

217.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.1	4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	3.19	1.66	3.56	HS 33.24	59.8
HS20	3.11	5.31	2.77	5.93	HS 55.39	99.7
2F1	4.76	8.82	4.24	9.85	0.00	63.6
3F1	3.74	6.13	3.34	6.85	0.00	76.8
4F1	3.65	5.67	3.25	6.34	0.00	87.9
5C1	3.98	6.16	3.55	6.88	0.00	142.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	2F1	-3.98	14.36	-3.06	11.04	0.00	0.00	0.00	0.00
OPER	3F1	-4.27	19.12	-3.28	14.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	19.55	-2.71	15.04	0.00	0.00	0.00	0.00
OPER	5C1	-7.32	18.72	-5.63	14.40	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.08	2.92	HS 58.47	105.2
HS20	16.80	4.87	HS 97.45	175.4
2F1	30.34	7.80	0.00	117.1
3F1	28.27	5.86	0.00	134.8
4F1	34.29	5.73	0.00	154.7
5C1	16.48	5.99	0.00	239.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.59	62.3
HS20	2.88	5.52	2.88	5.52	HS 57.65	103.8
2F1	4.41	9.17	4.41	9.17	0.00	66.2
3F1	3.48	6.37	3.48	6.37	0.00	80.0
4F1	3.39	5.90	3.39	5.90	0.00	91.4

5C1	3.70	6.40	3.70	6.40	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 12.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00			
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00			
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00			
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	4.13	1.43	4.60	HS 28.58	51.5
HS20	2.68	6.88	2.38	7.66	HS 47.64	85.8
2F1	3.92	11.43	3.48	12.73	0.00	52.3
3F1	3.07	7.95	2.73	8.85	0.00	62.7
4F1	2.86	7.35	2.54	8.19	0.00	68.6
5C1	3.19	6.96	2.84	7.75	0.00	113.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.3	68.4
OPER	151.3	-118.8	113.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	2F1	-6.29	11.62	-4.84	8.94	0.00	0.00	0.00	0.00
OPER	3F1	-7.48	15.07	-5.75	11.59	0.00	0.00	0.00	0.00
OPER	4F1	-6.33	15.06	-4.87	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.64	15.88	-7.41	12.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	3.62	HS 72.31	130.2
HS20	11.83	6.03	HS 120.51	216.9
2F1	18.90	9.81	0.00	147.1
3F1	15.89	7.56	0.00	173.9
4F1	18.78	7.57	0.00	204.3
5C1	12.33	7.17	0.00	286.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00	
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00	
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	4.29	1.49	4.29	HS 29.79	53.6
HS20	2.48	7.15	2.48	7.15	HS 49.64	89.4
2F1	3.63	11.87	3.63	11.87	0.00	54.5
3F1	2.84	8.25	2.84	8.25	0.00	65.3
4F1	2.65	7.63	2.65	7.63	0.00	71.5

5C1	2.96	7.23	2.96	7.23	0.00	118.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.2
 Superimposed Dead Load Moment 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	2F1	74.76	R	57.51	47.50	0.0	0.00	0.00	0.00		
		-18.29	L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	L	76.84	27.50	0.0	0.00	0.00	0.00		
		-26.30	L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	R	80.26	51.50	0.0	0.00	0.00	0.00		
		-28.44	L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	R	73.34	88.50	0.0	0.00	0.00	0.00		
		-38.29	L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	5.64	1.44	6.27	HS 28.80	51.8
HS20	2.70	9.39	2.40	10.44	HS 48.00	86.4
2F1	3.80	15.60	3.37	17.35	0.00	50.6
3F1	2.84	10.85	2.52	12.06	0.00	58.0
4F1	2.72	10.03	2.41	11.16	0.00	65.2
5C1	2.98	7.45	2.64	8.29	0.00	105.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

2.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1

0.0

0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	2F1	-8.83	8.91	-6.80	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-11.07	11.18	-8.52	8.60	0.00	0.00	0.00	0.00
OPER	4F1	-10.32	10.46	-7.94	8.04	0.00	0.00	0.00	0.00
OPER	5C1	-12.17	12.98	-9.36	9.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.82	4.70	HS 93.95	169.1
HS20	8.03	7.83	HS 156.59	281.9
2F1	13.24	12.99	0.00	194.9
3F1	10.56	10.36	0.00	238.2
4F1	11.33	11.07	0.00	299.0
5C1	9.61	8.92	0.00	356.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	2F1	74.76 R	57.51	47.50	0.0	0.00	0.00	0.00	
		-18.29 L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 L	76.84	27.50	0.0	0.00	0.00	0.00	
		-26.30 L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 R	80.26	51.50	0.0	0.00	0.00	0.00	
		-28.44 L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 R	73.34	88.50	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	5.85	1.50	5.85	HS 30.03	54.1
HS20	2.50	9.74	2.50	9.74	HS 50.05	90.1
2F1	3.52	16.19	3.52	16.19	0.00	52.7
3F1	2.63	11.26	2.63	11.26	0.00	60.5
4F1	2.52	10.41	2.52	10.41	0.00	68.0

5C1	2.76	7.73	2.76	7.73	0.00	110.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00			
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00			
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00			
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00			
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	5.08	1.42	5.66	HS 28.36	51.0
HS20	2.66	8.47	2.36	9.43	HS 47.26	85.1
2F1	3.88	13.00	3.44	14.46	0.00	51.6
3F1	3.03	9.04	2.69	10.05	0.00	61.8
4F1	2.82	8.34	2.51	9.28	0.00	67.6
5C1	3.06	7.48	2.72	8.32	0.00	108.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.3	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.0	70.7
OPER	151.3	-114.9	117.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	2F1	-11.53	6.35	-8.87	4.89	0.00	0.00	0.00	0.00
OPER	3F1	-14.95	7.59	-11.50	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-14.93	6.49	-11.48	4.99	0.00	0.00	0.00	0.00
OPER	5C1	-14.92	10.51	-11.48	8.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.70	6.75	HS 74.00	133.2
HS20	6.17	11.26	HS 123.33	222.0
2F1	9.97	18.54	0.00	149.5
3F1	7.69	15.52	0.00	176.8
4F1	7.70	18.15	0.00	207.9
5C1	7.70	11.21	0.00	308.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00	
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00	
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00	
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00	
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	5.28	1.48	5.28	HS 29.56	53.2
HS20	2.46	8.79	2.46	8.79	HS 49.27	88.7
2F1	3.59	13.49	3.59	13.49	0.00	53.8
3F1	2.80	9.38	2.80	9.38	0.00	64.4
4F1	2.61	8.66	2.61	8.66	0.00	70.5

5C1	2.83	7.76	2.83	7.76	0.00	113.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.2	-278.1	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00			
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00			
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00			
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00			
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.41	HS 32.43	58.4
HS20	3.04	6.59	2.70	7.34	HS 54.05	97.3
2F1	4.64	10.11	4.13	11.27	0.00	61.9
3F1	3.65	7.03	3.25	7.83	0.00	74.7
4F1	3.55	6.49	3.16	7.23	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-3.1	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.1	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	2F1	-14.27	4.03	-10.98	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.99	4.39	-14.61	3.38	0.00	0.00	0.00	0.00
OPER	4F1	-19.42	3.93	-14.94	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-18.31	8.12	-14.09	6.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.97	9.46	HS 59.45	107.0
HS20	4.95	15.76	HS 99.08	178.4
2F1	7.92	29.66	0.00	118.8
3F1	5.95	27.25	0.00	136.9
4F1	5.82	30.49	0.00	157.2
5C1	6.18	14.74	0.00	247.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00	
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00	
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00	
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00	
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.69	4.11	1.69	4.11	HS 33.78	60.8
HS20	2.82	6.84	2.82	6.84	HS 56.30	101.3
2F1	4.30	10.50	4.30	10.50	0.00	64.5
3F1	3.38	7.30	3.38	7.30	0.00	77.8
4F1	3.29	6.74	3.29	6.74	0.00	89.0

5C1	3.36	7.13	3.36	7.13	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00			
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00			
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.92	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.54	146.8
2F1	7.06	8.06	6.31	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.46	6.68	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

2.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed Shear (-)	Dead Load Shear (+)	Dead Load Shear
-0.4	-4.8		0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	2F1	-16.94	2.53	-13.03	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-23.05	3.64	-17.73	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-23.67	3.93	-18.20	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-21.87	5.87	-16.82	4.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.37	14.44	HS 47.32	85.2
HS20	3.94	24.07	HS 78.87	142.0
2F1	6.56	47.97	0.00	98.5
3F1	4.82	33.35	0.00	110.9
4F1	4.70	30.97	0.00	126.8
5C1	5.08	20.70	0.00	203.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.3	279.4	-279.4	279.4	-279.4	280.5	-278.3	280.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00	
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00	
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.87	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.79	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -15.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00			
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00			
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00			
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00			
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.72	2.31	6.04	2.60	HS 46.09	83.0
HS20	11.19	3.84	10.06	4.33	HS 76.82	138.3
2F1	21.03	6.49	18.91	7.31	0.00	97.4
3F1	21.17	4.51	19.04	5.08	0.00	103.8
4F1	19.83	4.17	17.83	4.69	0.00	112.5
5C1	10.10	4.85	9.08	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.6	74.1
OPER	151.3	-109.3	123.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	2F1	-19.43	2.53	-14.95	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	3.64	-20.74	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	3.94	-21.49	3.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	3.90	-19.58	3.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	17.59	HS 39.21	70.6
HS20	3.27	29.32	HS 65.36	117.6
2F1	5.63	48.71	0.00	84.4
3F1	4.05	33.87	0.00	93.3
4F1	3.91	31.33	0.00	105.6
5C1	4.30	31.69	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -15.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.8	161.1	-174.2	161.1	-174.2	177.5	-157.8	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.26	2.40	6.26	2.40	HS 48.06	86.5
HS20	10.44	4.01	10.44	4.01	HS 80.09	144.2
2F1	19.63	6.77	19.63	6.77	0.00	101.5
3F1	19.75	4.70	19.75	4.70	0.00	108.2
4F1	18.50	4.34	18.50	4.34	0.00	117.3

5C1

9.42

5.05

9.42

5.05

0.00

202.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.5	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.5	64.2
OPER	151.3	-107.4	107.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	2F1	-19.43	21.64	-14.95	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	30.57	-20.74	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	32.33	-21.49	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	28.84	-19.58	22.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.67	HS 33.44	60.2
HS20	2.80	2.79	HS 55.73	100.3
2F1	4.97	4.95	0.00	74.2
3F1	3.52	3.50	0.00	80.6
4F1	3.33	3.31	0.00	89.4
5C1	3.72	3.71	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-8.2	8.6

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.5	64.2
OPER	151.3	-107.4	107.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	2F1	-21.63	21.64	-16.64	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.54	30.57	-23.49	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-32.28	32.33	-24.83	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.86	28.84	-22.20	22.18	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.67	HS 33.44	60.2
HS20	2.80	2.79	HS 55.73	100.3
2F1	4.97	4.95	0.00	74.2
3F1	3.52	3.50	0.00	80.6
4F1	3.33	3.31	0.00	89.4
5C1	3.72	3.71	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00			
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00			
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00			
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00			
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.57	2.33	5.90	2.62	HS 46.51	83.7
HS20	10.94	3.88	9.83	4.36	HS 77.51	139.5
2F1	21.13	6.55	18.99	7.38	0.00	98.3
3F1	18.80	4.55	16.90	5.13	0.00	104.7
4F1	17.57	4.20	15.80	4.74	0.00	113.5
5C1	9.69	4.89	8.70	5.50	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

3.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.6

0.0

6.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.3	65.4
OPER	151.3	-123.8	108.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	2F1	-2.26	19.45	-1.74	14.97	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.47	-2.71	19.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.68	1.95	HS 39.00	70.2
HS20	34.46	3.25	HS 65.01	117.0
2F1	54.89	5.60	0.00	84.0
3F1	38.15	4.03	0.00	92.8
4F1	35.36	3.89	0.00	105.0
5C1	35.15	4.28	0.00	171.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00	
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00	
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00	
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00	
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.12	2.42	6.12	2.42	HS 48.48	87.3
HS20	10.21	4.04	10.21	4.04	HS 80.80	145.4
2F1	19.71	6.83	19.71	6.83	0.00	102.4
3F1	17.54	4.75	17.54	4.75	0.00	109.2
4F1	16.39	4.38	16.39	4.38	0.00	118.3

5C1	9.03	5.09	9.03	5.09	0.00	203.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00			
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00			
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00			
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00			
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.21	2.43	3.59	HS 48.67	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.12	146.0
2F1	7.03	8.16	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.4
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.88	6.04	4.36	6.76	0.00	174.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.5	0.0	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-121.9	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	2F1	-2.26	16.97	-1.74	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.78	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.72	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.71	2.35	HS 47.04	84.7
HS20	24.51	3.92	HS 78.41	141.1
2F1	54.06	6.53	0.00	97.9
3F1	37.57	4.80	0.00	110.3
4F1	34.82	4.67	0.00	126.2
5C1	23.05	5.06	0.00	202.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.62	91.1
HS20	4.22	5.56	4.22	5.56	HS 84.37	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.81	5.44	5.81	5.44	0.00	147.0

5C1

4.54

6.28

4.54

6.28

0.00

181.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00			
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00			
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00			
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00			
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	4.03	1.60	4.49	HS 31.99	57.6
HS20	3.00	6.71	2.67	7.48	HS 53.32	96.0
2F1	4.59	10.25	4.08	11.41	0.00	61.2
3F1	3.61	7.12	3.21	7.93	0.00	73.9
4F1	3.52	6.58	3.13	7.32	0.00	84.4
5C1	3.55	6.97	3.16	7.77	0.00	126.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

3.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.6
OPER	151.3	-120.1	112.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	2F1	-4.01	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.06	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	2.95	HS 59.07	106.3
HS20	16.00	4.92	HS 98.45	177.2
2F1	29.91	7.87	0.00	118.1
3F1	27.47	5.91	0.00	136.0
4F1	34.28	5.78	0.00	156.2
5C1	16.32	6.14	0.00	245.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.18	1.67	4.18	HS 33.33	60.0
HS20	2.78	6.97	2.78	6.97	HS 55.55	100.0
2F1	4.25	10.64	4.25	10.64	0.00	63.8
3F1	3.35	7.39	3.35	7.39	0.00	77.0
4F1	3.26	6.83	3.26	6.83	0.00	88.0

5C1	3.29	7.24	3.29	7.24	0.00	131.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00			
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00			
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00			
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00			
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.19	1.39	5.76	HS 27.75	49.9
HS20	2.61	8.64	2.31	9.60	HS 46.25	83.2
2F1	3.82	13.20	3.38	14.66	0.00	50.7
3F1	2.98	9.17	2.64	10.19	0.00	60.8
4F1	2.78	8.47	2.46	9.41	0.00	66.5
5C1	3.01	7.66	2.67	8.51	0.00	106.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.7
OPER	151.3	-118.2	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	2F1	-6.32	11.58	-4.86	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	15.00	-4.97	11.54	0.00	0.00	0.00	0.00
OPER	5C1	-9.68	14.97	-7.45	11.51	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.84	3.68	HS 73.64	132.6
HS20	11.40	6.14	HS 122.74	220.9
2F1	18.69	9.90	0.00	148.4
3F1	15.65	7.63	0.00	175.5
4F1	18.29	7.64	0.00	206.2
5C1	12.20	7.65	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00	
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00	
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00	
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00	
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.38	1.45	5.38	HS 28.94	52.1
HS20	2.41	8.97	2.41	8.97	HS 48.24	86.8
2F1	3.53	13.69	3.53	13.69	0.00	52.9
3F1	2.76	9.52	2.76	9.52	0.00	63.4
4F1	2.57	8.79	2.57	8.79	0.00	69.4

5C1	2.78	7.95	2.78	7.95	0.00	111.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 19.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00			
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00			
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00			
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	6.97	1.41	7.74	HS 28.18	50.7
HS20	2.65	11.62	2.35	12.90	HS 46.96	84.5
2F1	3.72	17.83	3.30	19.79	0.00	49.5
3F1	2.79	12.39	2.47	13.76	0.00	56.7
4F1	2.67	11.44	2.36	12.70	0.00	63.7
5C1	2.91	7.96	2.58	8.84	0.00	103.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.1	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	2F1	-8.87	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.14	-8.56	8.57	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-7.99	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.19	-9.40	9.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.97	HS 159.29	286.7
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.19	11.20	0.00	302.2
5C1	9.52	9.56	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 19.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00	
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00	
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	7.23	1.47	7.23	HS 29.40	52.9
HS20	2.45	12.05	2.45	12.05	HS 49.00	88.2
2F1	3.44	18.49	3.44	18.49	0.00	51.6
3F1	2.57	12.85	2.57	12.85	0.00	59.2
4F1	2.46	11.86	2.46	11.86	0.00	66.5

5C1	2.69	8.26	2.69	8.26	0.00	107.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.5
 Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00			
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00			
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.12	1.39	5.70	HS 27.81	50.1
HS20	2.61	8.54	2.32	9.49	HS 46.36	83.4
2F1	3.82	13.11	3.39	14.57	0.00	50.9
3F1	2.99	9.11	2.65	10.12	0.00	60.9
4F1	2.78	8.41	2.47	9.35	0.00	66.7
5C1	3.02	7.62	2.68	8.48	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-1.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	2F1	-11.57	6.33	-8.90	4.87	0.00	0.00	0.00	0.00
OPER	3F1	-15.00	7.56	-11.54	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.66	-11.51	7.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.67	6.91	HS 73.46	132.2
HS20	6.12	11.52	HS 122.44	220.4
2F1	9.88	18.72	0.00	148.2
3F1	7.62	15.68	0.00	175.2
4F1	7.62	18.32	0.00	205.9
5C1	7.64	12.26	0.00	305.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00	
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00	
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.32	1.45	5.32	HS 29.01	52.2
HS20	2.42	8.86	2.42	8.86	HS 48.35	87.0
2F1	3.54	13.60	3.54	13.60	0.00	53.0
3F1	2.76	9.45	2.76	9.45	0.00	63.5
4F1	2.58	8.73	2.58	8.73	0.00	69.5

5C1	2.79	7.91	2.79	7.91	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.14	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.57	96.4
2F1	4.61	10.15	4.10	11.31	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.2
4F1	3.53	6.51	3.14	7.26	0.00	84.8
5C1	3.60	6.91	3.20	7.70	0.00	128.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

3.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.4	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.65	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.48	-14.98	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.34	-14.12	5.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.73	HS 58.95	106.1
HS20	4.91	16.22	HS 98.25	176.9
2F1	7.86	29.96	0.00	117.9
3F1	5.90	27.52	0.00	135.7
4F1	5.77	34.54	0.00	155.9
5C1	6.12	16.39	0.00	244.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.12	1.67	4.12	HS 33.48	60.3
HS20	2.79	6.87	2.79	6.87	HS 55.80	100.4
2F1	4.27	10.54	4.27	10.54	0.00	64.1
3F1	3.36	7.33	3.36	7.33	0.00	77.3
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1 3.33 7.18 3.33 7.18 0.00 133.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

3.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.3	73.3
OPER	151.3	-110.5	122.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	2F1	-16.97	2.24	-13.05	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.23	-17.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.48	-18.24	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.28	-16.86	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	15.01	HS 46.94	84.5
HS20	3.91	25.02	HS 78.23	140.8
2F1	6.51	54.45	0.00	97.7
3F1	4.78	37.85	0.00	110.1
4F1	4.66	35.08	0.00	125.9
5C1	5.04	23.16	0.00	201.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1

4.64

6.20

4.64

6.20

0.00

185.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00			
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.86	2.29	6.17	2.58	HS 45.78	82.4
HS20	11.43	3.82	10.28	4.30	HS 76.30	137.3
2F1	21.24	6.45	19.11	7.27	0.00	96.8
3F1	21.31	4.48	19.17	5.06	0.00	103.1
4F1	19.96	4.14	17.96	4.67	0.00	111.8
5C1	10.17	4.81	9.15	5.43	0.00	192.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

3.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.6	-7.1	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.2	74.4
OPER	151.3	-108.7	124.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	2F1	-19.45	2.24	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.23	-20.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	3.50	-21.53	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.51	-19.61	2.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	21.34	HS 38.91	70.0
HS20	3.24	35.57	HS 64.86	116.7
2F1	5.59	55.29	0.00	83.8
3F1	4.03	38.43	0.00	92.6
4F1	3.88	35.48	0.00	104.8
5C1	4.26	35.37	0.00	170.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00	
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.40	2.39	6.40	2.39	HS 47.75	85.9
HS20	10.67	3.98	10.67	3.98	HS 79.58	143.2
2F1	19.83	6.73	19.83	6.73	0.00	100.9
3F1	19.89	4.68	19.89	4.68	0.00	107.5
4F1	18.63	4.32	18.63	4.32	0.00	116.6

5C1	9.50	5.02	9.50	5.02	0.00	200.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00			
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.1	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.90	-19.61	22.23	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.93	4.94	0.00	74.0
3F1	3.49	3.50	0.00	80.4
4F1	3.30	3.31	0.00	89.2
5C1	3.70	3.70	0.00	147.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00			
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.8	8.7

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.32	32.33	-24.86	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.90	-22.22	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.93	4.94	0.00	74.0
3F1	3.49	3.50	0.00	80.4
4F1	3.30	3.31	0.00	89.2
5C1	3.70	3.70	0.00	147.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00			
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00			
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00			
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00			
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.78	2.29	6.10	2.58	HS 45.75	82.4
HS20	11.30	3.81	10.17	4.30	HS 76.26	137.3
2F1	21.27	6.45	19.14	7.27	0.00	96.7
3F1	21.43	4.48	19.28	5.05	0.00	103.1
4F1	20.07	4.14	18.06	4.67	0.00	111.7
5C1	10.20	4.81	9.18	5.42	0.00	192.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.50	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.94	1.95	HS 38.94	70.1
HS20	34.90	3.24	HS 64.91	116.8
2F1	54.98	5.59	0.00	83.9
3F1	38.22	4.03	0.00	92.7
4F1	35.42	3.88	0.00	104.9
5C1	35.21	4.27	0.00	170.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.5	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
OPER 260.9	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.33	2.39	6.33	2.39	HS 47.72	85.9
HS20	10.55	3.98	10.55	3.98	HS 79.53	143.2
2F1	19.85	6.72	19.85	6.72	0.00	100.8
3F1	20.00	4.67	20.00	4.67	0.00	107.5
4F1	18.74	4.32	18.74	4.32	0.00	116.5

5C1 9.52 5.01 9.52 5.01 0.00 200.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00			
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00			
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00			
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00			
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.14	2.45	3.52	HS 49.08	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.80	147.2
2F1	7.08	8.04	6.33	9.01	0.00	95.0
3F1	5.80	5.59	5.19	6.26	0.00	119.4
4F1	6.30	5.16	5.64	5.78	0.00	139.4
5C1	5.00	5.96	4.47	6.67	0.00	178.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-73.3	66.4
OPER	151.3	-122.1	110.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.84	2.35	HS 46.97	84.6
HS20	24.73	3.91	HS 78.29	140.9
2F1	54.15	6.52	0.00	97.8
3F1	37.64	4.79	0.00	110.1
4F1	34.88	4.67	0.00	126.0
5C1	23.08	5.05	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00	
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00	
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00	
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00	
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.03	91.9
HS20	4.25	5.45	4.25	5.45	HS 85.05	153.1
2F1	6.58	8.37	6.58	8.37	0.00	98.8
3F1	5.40	5.82	5.40	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.0

5C1	4.65	6.20	4.65	6.20	0.00	185.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00			
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.41	HS 32.23	58.0
HS20	3.02	6.60	2.69	7.36	HS 53.72	96.7
2F1	4.62	10.12	4.11	11.29	0.00	61.7
3F1	3.64	7.04	3.24	7.84	0.00	74.4
4F1	3.54	6.50	3.15	7.24	0.00	85.1
5C1	3.61	6.89	3.21	7.69	0.00	128.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3

0.0

3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.66	2.95	HS 58.99	106.2
HS20	16.10	4.92	HS 98.32	177.0
2F1	29.94	7.86	0.00	117.9
3F1	27.51	5.91	0.00	135.8
4F1	34.35	5.78	0.00	156.0
5C1	16.34	6.13	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00	
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.57	60.4
HS20	2.80	6.85	2.80	6.85	HS 55.96	100.7
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.31	3.37	7.31	0.00	77.5
4F1	3.28	6.75	3.28	6.75	0.00	88.6

5C1	3.34	7.16	3.34	7.16	0.00	133.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 16.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.9	-171.7	150.7	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00			
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.40	5.68	HS 27.92	50.3
HS20	2.62	8.51	2.33	9.46	HS 46.54	83.8
2F1	3.84	13.06	3.40	14.52	0.00	51.0
3F1	3.00	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.38	2.48	9.32	0.00	66.9
5C1	3.03	7.59	2.69	8.44	0.00	107.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.6
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.87	3.68	HS 73.52	132.3
HS20	11.46	6.13	HS 122.53	220.5
2F1	18.72	9.88	0.00	148.2
3F1	15.67	7.62	0.00	175.3
4F1	18.31	7.63	0.00	206.0
5C1	12.22	7.64	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00	
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.30	1.46	5.30	HS 29.12	52.4
HS20	2.43	8.83	2.43	8.83	HS 48.53	87.4
2F1	3.55	13.55	3.55	13.55	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.8
4F1	2.58	8.70	2.58	8.70	0.00	69.8

5C1	2.80	7.88	2.80	7.88	0.00	112.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.60	6.83	1.42	7.59	HS 28.31	51.0
HS20	2.66	11.38	2.36	12.64	HS 47.19	84.9
2F1	3.74	17.74	3.31	19.71	0.00	49.7
3F1	2.80	12.33	2.48	13.70	0.00	57.0
4F1	2.68	11.39	2.37	12.65	0.00	64.1
5C1	2.93	7.92	2.60	8.80	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.5	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.53	172.0
HS20	7.97	7.96	HS 159.21	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.0
5C1	9.53	9.51	0.00	380.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
179.7								
OPER	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-
299.4								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.08	1.48	7.08	HS 29.54	53.2
HS20	2.46	11.80	2.46	11.80	HS 49.23	88.6
2F1	3.46	18.40	3.46	18.40	0.00	51.9
3F1	2.59	12.79	2.59	12.79	0.00	59.5
4F1	2.47	11.81	2.47	11.81	0.00	66.8

5C1	2.71	8.21	2.71	8.21	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.8	-171.8	150.6	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	283.0	-286.3	251.0	-318.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.90	50.2
HS20	2.62	8.52	2.33	9.47	HS 46.51	83.7
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.39	2.48	9.32	0.00	66.9
5C1	3.03	7.60	2.69	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	2F1	-11.57	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.56	132.4
HS20	6.13	11.42	HS 122.61	220.7
2F1	9.89	18.70	0.00	148.3
3F1	7.63	15.66	0.00	175.4
4F1	7.63	18.30	0.00	206.1
5C1	7.65	12.21	0.00	305.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.30	1.46	5.30	HS 29.10	52.4
HS20	2.42	8.84	2.42	8.84	HS 48.50	87.3
2F1	3.55	13.56	3.55	13.56	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.7
4F1	2.58	8.70	2.58	8.70	0.00	69.7

5C1	2.80	7.88	2.80	7.88	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.19	57.9
HS20	3.02	6.61	2.68	7.36	HS 53.64	96.6
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.15	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.6	72.1
OPER	151.3	-112.6	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.62	HS 59.03	106.3
HS20	4.92	16.03	HS 98.38	177.1
2F1	7.87	29.92	0.00	118.0
3F1	5.91	27.49	0.00	135.9
4F1	5.78	34.34	0.00	156.1
5C1	6.13	16.33	0.00	245.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.12	1.68	4.12	HS 33.53	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.88	100.6
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.5

5C1

3.34

7.17

3.34

7.17

0.00

133.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.97	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.62	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.76	HS 47.01	84.6
HS20	3.92	24.59	HS 78.34	141.0
2F1	6.52	54.14	0.00	97.9
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.87	0.00	126.1
5C1	5.05	23.07	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.1	-168.1	167.1	-168.1	168.4	-166.9	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.92	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.87	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00		87.50	
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00		87.50	
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00		0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00		0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00		0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00		0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.79	2.29	6.11	2.59	HS 45.87	82.6
HS20	11.32	3.82	10.19	4.31	HS 76.45	137.6
2F1	21.21	6.46	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.3
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.43	0.00	192.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.3
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.53	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.79	HS 38.97	70.1
HS20	3.25	34.65	HS 64.95	116.9
2F1	5.59	54.97	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	105.0
5C1	4.27	35.20	0.00	170.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
Check Point I. D. 4.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.34	2.39	6.34	2.39	HS 47.84	86.1
HS20	10.57	3.99	10.57	3.99	HS 79.73	143.5
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.68	19.86	4.68	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1 9.48 5.03 9.48 5.03 0.00 201.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00		
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00		
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.93	3.47	21.67	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.43	3.63	22.43	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.93	3.47	21.67	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.43	3.63	22.43	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.68	2.29	6.01	2.59	HS 45.89	82.6
HS20	11.13	3.82	10.01	4.31	HS 76.48	137.7
2F1	21.21	6.47	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.4
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.44	0.00	192.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.81	1.95	HS 38.96	70.1
HS20	34.67	3.25	HS 64.94	116.9
2F1	54.96	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	104.9
5C1	35.19	4.27	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.23	2.39	6.23	2.39	HS 47.85	86.1
HS20	10.39	3.99	10.39	3.99	HS 79.75	143.5
2F1	19.79	6.74	19.79	6.74	0.00	101.1
3F1	19.86	4.69	19.86	4.69	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1

9.48

5.03

9.48

5.03

0.00

201.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.58	146.9
2F1	7.06	8.06	6.32	9.03	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.77	2.35	HS 47.00	84.6
HS20	24.61	3.92	HS 78.33	141.0
2F1	54.13	6.52	0.00	97.8
3F1	37.63	4.79	0.00	110.2
4F1	34.87	4.67	0.00	126.0
5C1	23.07	5.05	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.3	279.4	-279.4	279.4	-279.4	280.5	-278.3	280.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00 40.00
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00 40.00
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00 0.00
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00 0.00
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00 0.00
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.83	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.16	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.61	96.5
2F1	4.61	10.14	4.10	11.30	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.3
4F1	3.53	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.91	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.95	HS 59.02	106.2
HS20	16.05	4.92	HS 98.36	177.0
2F1	29.93	7.87	0.00	118.0
3F1	27.50	5.91	0.00	135.9
4F1	34.33	5.78	0.00	156.0
5C1	16.33	6.13	0.00	245.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.12	1.67	4.12	HS 33.50	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.84	100.5
2F1	4.27	10.53	4.27	10.53	0.00	64.1
3F1	3.36	7.32	3.36	7.32	0.00	77.4
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1 3.34 7.17 3.34 7.17 0.00 133.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.48	HS 46.46	83.6
2F1	3.83	13.08	3.40	14.54	0.00	51.0
3F1	2.99	9.09	2.65	10.11	0.00	61.0
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.55	132.4
HS20	11.43	6.13	HS 122.58	220.6
2F1	18.71	9.89	0.00	148.3
3F1	15.66	7.62	0.00	175.4
4F1	18.31	7.63	0.00	206.1
5C1	12.21	7.64	0.00	305.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.31	1.45	5.31	HS 29.07	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.45	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.1
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	111.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	6.85	1.41	7.61	HS 28.28	50.9
HS20	2.66	11.42	2.36	12.69	HS 47.13	84.8
2F1	3.74	17.76	3.31	19.73	0.00	49.6
3F1	2.79	12.35	2.47	13.71	0.00	56.9
4F1	2.67	11.40	2.37	12.66	0.00	64.0
5C1	2.93	7.93	2.59	8.80	0.00	103.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.96	HS 159.28	286.7
2F1	13.11	13.10	0.00	196.6
3F1	10.46	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.11	1.48	7.11	HS 29.50	53.1
HS20	2.46	11.85	2.46	11.85	HS 49.17	88.5
2F1	3.45	18.42	3.45	18.42	0.00	51.8
3F1	2.58	12.81	2.58	12.81	0.00	59.4
4F1	2.47	11.82	2.47	11.82	0.00	66.7

5C1	2.71	8.22	2.71	8.22	0.00	108.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.47	HS 46.47	83.6
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.09	2.65	10.10	0.00	61.1
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.53	132.4
HS20	6.13	11.44	HS 122.55	220.6
2F1	9.89	18.71	0.00	148.3
3F1	7.62	15.66	0.00	175.3
4F1	7.63	18.31	0.00	206.0
5C1	7.64	12.21	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.30	1.45	5.30	HS 29.08	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.46	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.2
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.18	57.9
HS20	3.01	6.61	2.68	7.36	HS 53.63	96.5
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-----------------	------------------------	---------------------

-0.3	-3.5	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.5	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.64	HS 59.00	106.2
HS20	4.92	16.07	HS 98.34	177.0
2F1	7.86	29.94	0.00	118.0
3F1	5.91	27.50	0.00	135.9
4F1	5.78	34.34	0.00	156.0
5C1	6.13	16.33	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.12	1.68	4.12	HS 33.52	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.86	100.6
2F1	4.28	10.53	4.28	10.53	0.00	64.1
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.4

5C1 3.34 7.17 3.34 7.17 0.00 133.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00		
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00		
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.80	HS 46.99	84.6
HS20	3.91	24.66	HS 78.31	141.0
2F1	6.52	54.14	0.00	97.8
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.88	0.00	126.0
5C1	5.05	23.08	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1

4.64

6.20

4.64

6.20

0.00

185.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.81	2.29	6.13	2.58	HS 45.84	82.5
HS20	11.35	3.82	10.21	4.31	HS 76.40	137.5
2F1	21.23	6.46	19.09	7.28	0.00	96.9
3F1	21.29	4.49	19.15	5.06	0.00	103.3
4F1	19.94	4.14	17.94	4.67	0.00	111.9
5C1	10.16	4.82	9.15	5.43	0.00	192.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.86	HS 38.95	70.1
HS20	3.25	34.76	HS 64.92	116.9
2F1	5.59	54.97	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	104.9
5C1	4.27	35.20	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.9	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
OPER 261.5	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.36	2.39	6.36	2.39	HS 47.80	86.0
HS20	10.59	3.98	10.59	3.98	HS 79.67	143.4
2F1	19.81	6.74	19.81	6.74	0.00	101.0
3F1	19.87	4.68	19.87	4.68	0.00	107.7
4F1	18.61	4.32	18.61	4.32	0.00	116.7

5C1

9.49

5.02

9.49

5.02

0.00

200.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.25	9.99	1.43	HS 25.10	45.2
HS20	18.38	2.09	16.65	2.38	HS 41.84	75.3
2F1	28.53	5.16	25.85	5.88	0.00	77.4
3F1	19.83	3.26	17.97	3.72	0.00	75.0
4F1	18.31	2.76	16.59	3.14	0.00	74.5
5C1	23.95	3.46	21.70	3.95	0.00	138.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.39	60.1
HS20	2.78	2.78	HS 55.65	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.4
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.34	1.31	10.34	1.31	HS 26.28	47.3
HS20	17.23	2.19	17.23	2.19	HS 43.80	78.8
2F1	26.75	5.40	26.75	5.40	0.00	81.0
3F1	18.59	3.41	18.59	3.41	0.00	78.5
4F1	17.17	2.89	17.17	2.89	0.00	78.0

5C1	22.45	3.63	22.45	3.63	0.00	145.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.25	9.99	1.43	HS 25.10	45.2
HS20	18.38	2.09	16.65	2.38	HS 41.84	75.3
2F1	28.53	5.16	25.85	5.88	0.00	77.4
3F1	19.83	3.26	17.97	3.72	0.00	75.0
4F1	18.31	2.76	16.59	3.14	0.00	74.5
5C1	23.95	3.46	21.70	3.95	0.00	138.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.39	60.1
HS20	2.78	2.78	HS 55.65	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.4
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.34	1.31	10.34	1.31	HS 26.28	47.3
HS20	17.23	2.19	17.23	2.19	HS 43.80	78.8
2F1	26.75	5.40	26.75	5.40	0.00	81.0
3F1	18.59	3.41	18.59	3.41	0.00	78.5
4F1	17.17	2.89	17.17	2.89	0.00	78.0

5C1	22.45	3.63	22.45	3.63	0.00	145.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.70	2.29	6.02	2.58	HS 45.84	82.5
HS20	11.16	3.82	10.04	4.31	HS 76.40	137.5
2F1	21.23	6.46	19.09	7.28	0.00	96.9
3F1	21.29	4.49	19.15	5.06	0.00	103.3
4F1	19.94	4.14	17.94	4.67	0.00	111.9
5C1	10.16	4.82	9.14	5.43	0.00	192.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.86	1.95	HS 38.95	70.1
HS20	34.76	3.25	HS 64.92	116.9
2F1	54.98	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	104.9
5C1	35.20	4.27	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.9	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
OPER 261.5	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.25	2.39	6.25	2.39	HS 47.80	86.0
HS20	10.42	3.98	10.42	3.98	HS 79.67	143.4
2F1	19.81	6.74	19.81	6.74	0.00	101.0
3F1	19.87	4.68	19.87	4.68	0.00	107.7
4F1	18.61	4.32	18.61	4.32	0.00	116.7

5C1

9.49

5.02

9.49

5.02

0.00

200.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.80	2.35	HS 46.99	84.6
HS20	24.66	3.91	HS 78.31	141.0
2F1	54.14	6.52	0.00	97.8
3F1	37.63	4.79	0.00	110.2
4F1	34.88	4.67	0.00	126.0
5C1	23.08	5.05	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1

4.64

6.20

4.64

6.20

0.00

185.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.18	57.9
HS20	3.01	6.61	2.68	7.36	HS 53.63	96.5
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.64	2.95	HS 59.00	106.2
HS20	16.07	4.92	HS 98.34	177.0
2F1	29.94	7.86	0.00	118.0
3F1	27.50	5.91	0.00	135.9
4F1	34.34	5.78	0.00	156.0
5C1	16.33	6.13	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.12	1.68	4.12	HS 33.52	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.86	100.6
2F1	4.28	10.53	4.28	10.53	0.00	64.1
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.4

5C1

3.34

7.17

3.34

7.17

0.00

133.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.47	HS 46.47	83.6
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.09	2.65	10.10	0.00	61.1
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

6.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.53	132.4
HS20	11.44	6.13	HS 122.55	220.6
2F1	18.71	9.89	0.00	148.3
3F1	15.66	7.62	0.00	175.3
4F1	18.31	7.63	0.00	206.0
5C1	12.21	7.64	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.30	1.45	5.30	HS 29.08	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.46	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.2
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.60	6.85	1.41	7.61	HS 28.28	50.9
HS20	2.66	11.42	2.36	12.69	HS 47.13	84.8
2F1	3.74	17.76	3.31	19.73	0.00	49.6
3F1	2.79	12.35	2.47	13.71	0.00	56.9
4F1	2.67	11.40	2.37	12.66	0.00	64.0
5C1	2.93	7.93	2.59	8.80	0.00	103.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.55	172.0
HS20	7.97	7.96	HS 159.25	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.11	1.48	7.11	HS 29.50	53.1
HS20	2.46	11.85	2.46	11.85	HS 49.17	88.5
2F1	3.45	18.42	3.45	18.42	0.00	51.8
3F1	2.58	12.81	2.58	12.81	0.00	59.4
4F1	2.47	11.82	2.47	11.82	0.00	66.7

5C1	2.71	8.22	2.71	8.22	0.00	108.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.48	HS 46.46	83.6
2F1	3.83	13.08	3.40	14.54	0.00	51.0
3F1	2.99	9.09	2.65	10.11	0.00	61.0
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.55	132.4
HS20	6.13	11.43	HS 122.58	220.6
2F1	9.89	18.71	0.00	148.3
3F1	7.62	15.66	0.00	175.4
4F1	7.63	18.31	0.00	206.1
5C1	7.64	12.21	0.00	305.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.31	1.45	5.31	HS 29.07	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.45	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.1
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	111.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.16	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.61	96.5
2F1	4.61	10.14	4.10	11.30	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.3
4F1	3.53	6.51	3.14	7.26	0.00	84.9
5C1	3.60	6.91	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.3	-3.5	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.6	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.63	HS 59.02	106.2
HS20	4.92	16.05	HS 98.36	177.0
2F1	7.87	29.93	0.00	118.0
3F1	5.91	27.50	0.00	135.9
4F1	5.78	34.33	0.00	156.0
5C1	6.13	16.33	0.00	245.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.12	1.67	4.12	HS 33.50	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.84	100.5
2F1	4.27	10.53	4.27	10.53	0.00	64.1
3F1	3.36	7.32	3.36	7.32	0.00	77.4
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1

3.34

7.17

3.34

7.17

0.00

133.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.06	8.06	6.32	9.03	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

6.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.77	HS 47.00	84.6
HS20	3.92	24.61	HS 78.33	141.0
2F1	6.52	54.13	0.00	97.8
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.87	0.00	126.0
5C1	5.05	23.07	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.3	279.4	-279.4	279.4	-279.4	280.5	-278.3	280.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.83	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.79	2.29	6.11	2.59	HS 45.89	82.6
HS20	11.32	3.82	10.18	4.31	HS 76.48	137.7
2F1	21.21	6.47	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.4
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.44	0.00	192.9

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.81	HS 38.96	70.1
HS20	3.25	34.67	HS 64.94	116.9
2F1	5.59	54.96	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	104.9
5C1	4.27	35.19	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.34	2.39	6.34	2.39	HS 47.85	86.1
HS20	10.56	3.99	10.56	3.99	HS 79.75	143.6
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.69	19.86	4.69	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1 9.48 5.03 9.48 5.03 0.00 201.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.84	3.47	21.59	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	107.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.35	3.63	22.35	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.84	3.47	21.59	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	107.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.35	3.63	22.35	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.68	2.29	6.01	2.59	HS 45.87	82.6
HS20	11.13	3.82	10.02	4.31	HS 76.45	137.6
2F1	21.21	6.46	19.08	7.29	0.00	96.9
3F1	21.28	4.49	19.14	5.07	0.00	103.3
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.43	0.00	192.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.3	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.49	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.79	1.95	HS 38.97	70.1
HS20	34.65	3.25	HS 64.95	116.9
2F1	54.97	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	105.0
5C1	35.20	4.27	0.00	170.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.23	2.39	6.23	2.39	HS 47.84	86.1
HS20	10.39	3.99	10.39	3.99	HS 79.73	143.5
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.68	19.86	4.68	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1

9.48

5.03

9.48

5.03

0.00

201.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.200
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -0.1
 Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.97	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.62	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.0	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.49	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.76	2.35	HS 47.01	84.6
HS20	24.59	3.92	HS 78.34	141.0
2F1	54.14	6.52	0.00	97.9
3F1	37.63	4.79	0.00	110.2
4F1	34.88	4.67	0.00	126.1
5C1	23.07	5.05	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.1	-168.1	167.1	-168.1	168.4	-166.9	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.92	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.87	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.19	57.9
HS20	3.02	6.61	2.68	7.36	HS 53.64	96.6
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.15	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.6
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.62	2.95	HS 59.03	106.3
HS20	16.03	4.92	HS 98.38	177.1
2F1	29.92	7.87	0.00	118.0
3F1	27.49	5.91	0.00	135.9
4F1	34.34	5.78	0.00	156.1
5C1	16.33	6.13	0.00	245.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.12	1.68	4.12	HS 33.53	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.88	100.6
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.5

5C1

3.34

7.17

3.34

7.17

0.00

133.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.8	-171.8	150.6	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	283.0	-286.3	251.0	-318.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.90	50.2
HS20	2.62	8.52	2.33	9.47	HS 46.51	83.7
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.39	2.48	9.32	0.00	66.9
5C1	3.03	7.60	2.69	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	2F1	-6.32	11.57	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.56	132.4
HS20	11.42	6.13	HS 122.61	220.7
2F1	18.70	9.89	0.00	148.3
3F1	15.66	7.63	0.00	175.4
4F1	18.30	7.63	0.00	206.1
5C1	12.21	7.65	0.00	305.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2	
INV.	HS20	107.96	R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62	L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	HS20	107.96	R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62	L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	2F1	73.82	R	56.78	170.00	0.0	0.00	0.00	0.00	
		-21.91	L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49	R	72.69	170.00	0.0	0.00	0.00	0.00	
		-31.52	L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37	R	77.98	174.00	0.0	0.00	0.00	0.00	
		-34.14	L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46	R	71.89	172.00	0.0	0.00	0.00	0.00	
		-37.68	L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.30	1.46	5.30	HS 29.10	52.4
HS20	2.42	8.84	2.42	8.84	HS 48.50	87.3
2F1	3.55	13.56	3.55	13.56	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.7
4F1	2.58	8.70	2.58	8.70	0.00	69.7

5C1	2.80	7.88	2.80	7.88	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.60	6.83	1.42	7.59	HS 28.31	51.0
HS20	2.66	11.38	2.36	12.64	HS 47.19	84.9
2F1	3.74	17.74	3.31	19.71	0.00	49.7
3F1	2.80	12.33	2.48	13.70	0.00	57.0
4F1	2.68	11.39	2.37	12.65	0.00	64.1
5C1	2.93	7.92	2.60	8.80	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.59	172.1
HS20	7.97	7.97	HS 159.32	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.2
5C1	9.52	9.52	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.4	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.08	1.48	7.08	HS 29.54	53.2
HS20	2.46	11.80	2.46	11.80	HS 49.23	88.6
2F1	3.46	18.40	3.46	18.40	0.00	51.9
3F1	2.59	12.79	2.59	12.79	0.00	59.5
4F1	2.47	11.81	2.47	11.81	0.00	66.8

5C1	2.71	8.21	2.71	8.21	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.9	-171.7	150.7	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00			
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.40	5.68	HS 27.92	50.3
HS20	2.62	8.51	2.33	9.46	HS 46.54	83.8
2F1	3.84	13.06	3.40	14.52	0.00	51.0
3F1	3.00	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.38	2.48	9.32	0.00	66.9
5C1	3.03	7.59	2.69	8.44	0.00	107.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.87	HS 73.52	132.3
HS20	6.13	11.46	HS 122.53	220.5
2F1	9.88	18.72	0.00	148.2
3F1	7.62	15.67	0.00	175.3
4F1	7.63	18.31	0.00	206.0
5C1	7.64	12.22	0.00	305.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00	
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.30	1.46	5.30	HS 29.12	52.4
HS20	2.43	8.83	2.43	8.83	HS 48.53	87.4
2F1	3.55	13.55	3.55	13.55	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.8
4F1	2.58	8.70	2.58	8.70	0.00	69.8

5C1	2.80	7.88	2.80	7.88	0.00	112.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00			
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.41	HS 32.23	58.0
HS20	3.02	6.60	2.69	7.36	HS 53.72	96.7
2F1	4.62	10.12	4.11	11.29	0.00	61.7
3F1	3.64	7.04	3.24	7.84	0.00	74.4
4F1	3.54	6.50	3.15	7.24	0.00	85.1
5C1	3.61	6.89	3.21	7.69	0.00	128.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.5	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.66	HS 58.99	106.2
HS20	4.92	16.10	HS 98.31	177.0
2F1	7.86	29.94	0.00	117.9
3F1	5.91	27.51	0.00	135.8
4F1	5.78	34.35	0.00	156.0
5C1	6.13	16.34	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00	
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.57	60.4
HS20	2.80	6.85	2.80	6.85	HS 55.96	100.7
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.31	3.37	7.31	0.00	77.5
4F1	3.28	6.75	3.28	6.75	0.00	88.6

5C1	3.34	7.16	3.34	7.16	0.00	133.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00			
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00			
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00			
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00			
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.14	2.45	3.52	HS 49.08	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.80	147.2
2F1	7.08	8.04	6.33	9.01	0.00	95.0
3F1	5.80	5.59	5.19	6.26	0.00	119.4
4F1	6.30	5.16	5.64	5.78	0.00	139.4
5C1	5.00	5.96	4.47	6.67	0.00	178.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.3
OPER	151.3	-110.6	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.84	HS 46.97	84.6
HS20	3.91	24.73	HS 78.29	140.9
2F1	6.52	54.15	0.00	97.8
3F1	4.79	37.64	0.00	110.1
4F1	4.67	34.88	0.00	126.0
5C1	5.05	23.08	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.03	91.9
HS20	4.25	5.45	4.25	5.45	HS 85.05	153.1
2F1	6.58	8.37	6.58	8.37	0.00	98.8
3F1	5.40	5.82	5.40	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.0

5C1	4.65	6.20	4.65	6.20	0.00	185.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00			
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00			
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00			
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.90	2.29	6.20	2.58	HS 45.75	82.4
HS20	11.49	3.81	10.34	4.30	HS 76.26	137.3
2F1	21.27	6.45	19.14	7.27	0.00	96.7
3F1	21.43	4.48	19.28	5.05	0.00	103.1
4F1	20.07	4.14	18.06	4.67	0.00	111.7
5C1	10.20	4.81	9.18	5.42	0.00	192.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.94	HS 38.94	70.1
HS20	3.24	34.90	HS 64.91	116.8
2F1	5.59	54.98	0.00	83.9
3F1	4.03	38.22	0.00	92.7
4F1	3.88	35.29	0.00	104.9
5C1	4.27	35.21	0.00	170.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
ber								
INV.	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
156.5								
OPER	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-
260.9								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00	
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00	
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00	
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00	
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.44	2.39	6.44	2.39	HS 47.72	85.9
HS20	10.73	3.98	10.73	3.98	HS 79.53	143.2
2F1	19.85	6.72	19.85	6.72	0.00	100.9
3F1	20.00	4.67	20.00	4.67	0.00	107.5
4F1	18.74	4.32	18.74	4.32	0.00	116.5

5C1 9.52 5.01 9.52 5.01 0.00 200.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	28.89	-19.61	22.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.94	4.93	0.00	74.0
3F1	3.50	3.49	0.00	80.4
4F1	3.31	3.30	0.00	89.2
5C1	3.70	3.70	0.00	147.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00			
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.8

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-28.90	28.89	-22.23	22.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.94	4.93	0.00	74.0
3F1	3.50	3.49	0.00	80.4
4F1	3.31	3.30	0.00	89.2
5C1	3.70	3.70	0.00	147.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04	R	13.87	205.50	0.0	28.38	21.83	177.50		
		-65.64	R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50	
OPER	HS20	18.04	R	13.87	205.50	0.0	28.38	21.83	177.50		
		-65.64	R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50	
OPER	2F1	15.01	R	11.55	187.50	0.0	0.00	0.00	0.00		
		-38.82	L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	14.97	L	11.51	130.00	0.0	0.00	0.00	0.00		
		-55.85	L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.98	L	12.29	126.00	0.0	0.00	0.00	0.00		
		-60.49	L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.35	L	24.11	130.50	0.0	0.00	0.00	0.00		
		-52.05	L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.74	2.29	6.07	2.58	HS 45.78	82.4
HS20	11.24	3.82	10.11	4.30	HS 76.30	137.3
2F1	21.24	6.45	19.11	7.27	0.00	96.8
3F1	21.31	4.48	19.17	5.06	0.00	103.1
4F1	19.96	4.14	17.96	4.67	0.00	111.8
5C1	10.17	4.81	9.15	5.43	0.00	192.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

8.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.2
OPER	151.3	-124.1	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	2F1	-2.24	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	27.00	-2.48	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	27.99	-2.68	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.51	25.49	-2.70	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.34	1.95	HS 38.91	70.0
HS20	35.57	3.24	HS 64.86	116.7
2F1	55.29	5.59	0.00	83.8
3F1	38.43	4.03	0.00	92.6
4F1	35.61	3.88	0.00	104.8
5C1	35.37	4.26	0.00	170.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.29	2.39	6.29	2.39	HS 47.75	85.9
HS20	10.49	3.98	10.49	3.98	HS 79.58	143.2
2F1	19.83	6.73	19.83	6.73	0.00	100.9
3F1	19.89	4.68	19.89	4.68	0.00	107.5
4F1	18.63	4.32	18.63	4.32	0.00	116.6

5C1	9.50	5.02	9.50	5.02	0.00	200.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.3
OPER	151.3	-122.2	110.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	2F1	-2.24	16.97	-1.73	13.05	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	23.10	-2.48	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	23.71	-2.68	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	21.92	-4.06	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.01	2.35	HS 46.94	84.5
HS20	25.02	3.91	HS 78.23	140.8
2F1	54.45	6.51	0.00	97.7
3F1	37.85	4.78	0.00	110.1
4F1	35.08	4.66	0.00	125.9
5C1	23.16	5.04	0.00	201.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1

4.64

6.20

4.64

6.20

0.00

185.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.14	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.57	96.4
2F1	4.61	10.15	4.10	11.31	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.2
4F1	3.53	6.51	3.14	7.26	0.00	84.8
5C1	3.60	6.91	3.20	7.70	0.00	128.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.65	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	19.48	-2.68	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.34	18.36	-5.65	14.12	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.73	2.95	HS 58.95	106.1
HS20	16.22	4.91	HS 98.25	176.9
2F1	29.96	7.86	0.00	117.9
3F1	27.52	5.90	0.00	135.7
4F1	34.54	5.77	0.00	155.9
5C1	16.39	6.12	0.00	244.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.12	1.67	4.12	HS 33.48	60.3
HS20	2.79	6.87	2.79	6.87	HS 55.80	100.4
2F1	4.27	10.54	4.27	10.54	0.00	64.1
3F1	3.36	7.33	3.36	7.33	0.00	77.3
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1 3.33 7.18 3.33 7.18 0.00 133.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.5
 Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00			
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00			
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.12	1.39	5.70	HS 27.81	50.1
HS20	2.61	8.54	2.32	9.49	HS 46.36	83.4
2F1	3.82	13.11	3.39	14.57	0.00	50.9
3F1	2.99	9.11	2.65	10.12	0.00	60.9
4F1	2.78	8.41	2.47	9.35	0.00	66.7
5C1	3.02	7.62	2.68	8.48	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

8.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2

0.0

1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.4	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	2F1	-6.33	11.57	-4.87	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.56	15.00	-5.81	11.54	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.66	14.97	-7.43	11.51	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.91	3.67	HS 73.46	132.2
HS20	11.52	6.12	HS 122.44	220.4
2F1	18.72	9.88	0.00	148.2
3F1	15.68	7.62	0.00	175.2
4F1	18.32	7.62	0.00	205.9
5C1	12.26	7.64	0.00	305.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00	
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00	
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.32	1.45	5.32	HS 29.01	52.2
HS20	2.42	8.86	2.42	8.86	HS 48.35	87.0
2F1	3.54	13.60	3.54	13.60	0.00	53.0
3F1	2.76	9.45	2.76	9.45	0.00	63.5
4F1	2.58	8.73	2.58	8.73	0.00	69.5

5C1	2.79	7.91	2.79	7.91	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 19.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00	
OPER	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00	
OPER	2F1	75.01	L	57.70	177.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	100.30	R	77.16	197.50	0.0	0.00	0.00	0.00		
		-23.40	L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.77	R	80.59	201.50	0.0	0.00	0.00	0.00		
		-25.34	L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	96.04	R	73.88	238.50	0.0	0.00	0.00	0.00		
		-36.40	L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	6.97	1.41	7.74	HS 28.18	50.7
HS20	2.65	11.62	2.35	12.90	HS 46.96	84.5
2F1	3.72	17.83	3.30	19.79	0.00	49.5
3F1	2.79	12.39	2.47	13.76	0.00	56.7
4F1	2.67	11.44	2.36	12.70	0.00	63.7
5C1	2.91	7.96	2.58	8.84	0.00	103.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	2F1	-8.88	8.87	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.14	11.13	-8.57	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	7.99	0.00	0.00	0.00	0.00
OPER	5C1	-12.19	12.22	-9.37	9.40	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.79	4.77	HS 95.47	171.8
HS20	7.98	7.96	HS 159.11	286.4
2F1	13.13	13.09	0.00	196.4
3F1	10.47	10.44	0.00	240.1
4F1	11.21	11.18	0.00	301.9
5C1	9.57	9.51	0.00	380.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 19.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	7.23	1.47	7.23	HS 29.40	52.9
HS20	2.45	12.05	2.45	12.05	HS 49.00	88.2
2F1	3.44	18.49	3.44	18.49	0.00	51.6
3F1	2.57	12.85	2.57	12.85	0.00	59.2
4F1	2.46	11.86	2.46	11.86	0.00	66.5

5C1	2.69	8.26	2.69	8.26	0.00	107.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00			
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00			
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00			
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00			
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.19	1.39	5.76	HS 27.75	49.9
HS20	2.61	8.64	2.31	9.60	HS 46.25	83.2
2F1	3.82	13.20	3.38	14.66	0.00	50.7
3F1	2.98	9.17	2.64	10.19	0.00	60.8
4F1	2.78	8.47	2.46	9.41	0.00	66.5
5C1	3.01	7.66	2.67	8.51	0.00	106.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.6	118.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	2F1	-11.58	6.32	-8.91	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-15.00	6.46	-11.54	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.68	-11.51	7.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.84	HS 73.64	132.6
HS20	6.14	11.40	HS 122.74	220.9
2F1	9.90	18.69	0.00	148.4
3F1	7.63	15.65	0.00	175.5
4F1	7.64	18.29	0.00	206.2
5C1	7.65	12.20	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00	
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00	
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00	
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00	
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.45	5.38	1.45	5.38	HS 28.94	52.1
HS20	2.41	8.97	2.41	8.97	HS 48.24	86.8
2F1	3.53	13.69	3.53	13.69	0.00	52.9
3F1	2.76	9.52	2.76	9.52	0.00	63.4
4F1	2.57	8.79	2.57	8.79	0.00	69.4

5C1	2.78	7.95	2.78	7.95	0.00	111.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00			
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00			
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00			
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00			
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	4.03	1.60	4.49	HS 31.99	57.6
HS20	3.00	6.71	2.67	7.48	HS 53.32	96.0
2F1	4.59	10.25	4.08	11.41	0.00	61.2
3F1	3.61	7.12	3.21	7.93	0.00	73.9
4F1	3.52	6.58	3.13	7.32	0.00	84.4
5C1	3.55	6.97	3.16	7.77	0.00	126.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

8.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.6	72.0
OPER	151.3	-112.7	120.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	2F1	-14.31	4.01	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.06	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.99	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.60	HS 59.07	106.3
HS20	4.92	16.00	HS 98.45	177.2
2F1	7.87	29.91	0.00	118.1
3F1	5.91	27.47	0.00	136.0
4F1	5.78	34.28	0.00	156.2
5C1	6.14	16.32	0.00	245.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00	
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00	
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00	
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00	
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.18	1.67	4.18	HS 33.33	60.0
HS20	2.78	6.97	2.78	6.97	HS 55.55	100.0
2F1	4.25	10.64	4.25	10.64	0.00	63.8
3F1	3.35	7.39	3.35	7.39	0.00	77.0
4F1	3.26	6.83	3.26	6.83	0.00	88.0

5C1	3.29	7.24	3.29	7.24	0.00	131.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.21	2.43	3.59	HS 48.67	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.12	146.0
2F1	7.03	8.16	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.4
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.88	6.04	4.36	6.76	0.00	174.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	2F1	-16.97	2.26	-13.06	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.25	-17.78	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.72	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.71	HS 47.04	84.7
HS20	3.92	24.51	HS 78.41	141.1
2F1	6.53	54.06	0.00	97.9
3F1	4.80	37.57	0.00	110.3
4F1	4.67	34.82	0.00	126.2
5C1	5.06	23.05	0.00	202.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.62	91.1
HS20	4.22	5.56	4.22	5.56	HS 84.37	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.81	5.44	5.81	5.44	0.00	147.0

5C1

4.54

6.28

4.54

6.28

0.00

181.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00			
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00			
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00			
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00			
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.68	2.33	6.00	2.62	HS 46.51	83.7
HS20	11.12	3.88	10.00	4.36	HS 77.51	139.5
2F1	21.13	6.55	18.99	7.38	0.00	98.3
3F1	18.80	4.55	16.90	5.13	0.00	104.7
4F1	17.57	4.20	15.80	4.74	0.00	113.5
5C1	9.69	4.89	8.70	5.50	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

8.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.3
OPER	151.3	-108.9	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	2F1	-19.45	2.26	-14.97	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.25	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	3.52	-19.59	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.68	HS 39.00	70.2
HS20	3.25	34.46	HS 65.01	117.0
2F1	5.60	54.89	0.00	84.0
3F1	4.03	38.15	0.00	92.8
4F1	3.89	35.23	0.00	105.0
5C1	4.28	35.15	0.00	171.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.23	2.42	6.23	2.42	HS 48.48	87.3
HS20	10.38	4.04	10.38	4.04	HS 80.80	145.4
2F1	19.71	6.83	19.71	6.83	0.00	102.4
3F1	17.54	4.75	17.54	4.75	0.00	109.2
4F1	16.39	4.38	16.39	4.38	0.00	118.3

5C1 9.03 5.09 9.03 5.09 0.00 203.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	2F1	13.39	R	10.30	242.50	0.0	0.00	0.00	0.00		
		-44.52	L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	19.26	R	14.81	245.00	0.0	0.00	0.00	0.00		
		-70.38	R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	20.82	R	16.01	248.00	0.0	0.00	0.00	0.00		
		-83.21	R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	17.13	R	13.17	284.50	0.0	0.00	0.00	0.00		
		-66.15	R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 HS20

Member I. D.	S03	2F1
Check Point I. D.	9.000	3F1
		4F1
		5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	2F1	-19.45	21.63	-14.97	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.54	-20.77	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.28	-21.54	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	28.86	-19.59	22.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.68	HS 33.44	60.2
HS20	2.79	2.80	HS 55.73	100.3
2F1	4.95	4.97	0.00	74.2
3F1	3.50	3.52	0.00	80.6
4F1	3.31	3.33	0.00	89.4
5C1	3.71	3.72	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	2F1	13.39	R	10.30	242.50	0.0	0.00	0.00	0.00		
		-44.52	L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	19.26	R	14.81	245.00	0.0	0.00	0.00	0.00		
		-70.38	R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	20.82	R	16.01	248.00	0.0	0.00	0.00	0.00		
		-83.21	R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	17.13	R	13.17	284.50	0.0	0.00	0.00	0.00		
		-66.15	R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-8.6	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	2F1	-21.64	21.63	-16.65	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.54	-23.52	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.28	-24.87	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-28.84	28.86	-22.18	22.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.68	HS 33.44	60.2
HS20	2.79	2.80	HS 55.73	100.3
2F1	4.95	4.97	0.00	74.2
3F1	3.50	3.52	0.00	80.6
4F1	3.31	3.33	0.00	89.4
5C1	3.71	3.72	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -15.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00			
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00			
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00			
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00			
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.60	2.31	5.94	2.60	HS 46.09	83.0
HS20	11.01	3.84	9.90	4.33	HS 76.82	138.3
2F1	21.03	6.49	18.91	7.31	0.00	97.4
3F1	21.17	4.51	19.04	5.08	0.00	103.8
4F1	19.83	4.17	17.83	4.69	0.00	112.5
5C1	10.09	4.85	9.08	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

9.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.1	65.6
OPER	151.3	-123.4	109.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	2F1	-2.53	19.43	-1.95	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	26.96	-2.80	20.74	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	27.94	-3.02	21.49	0.00	0.00	0.00	0.00
OPER	5C1	-3.90	25.45	-3.00	19.58	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.28	1.96	HS 39.21	70.6
HS20	30.47	3.27	HS 65.36	117.6
2F1	48.72	5.63	0.00	84.4
3F1	33.87	4.05	0.00	93.3
4F1	31.44	3.91	0.00	105.6
5C1	31.69	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -15.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.8	161.1	-174.2	161.1	-174.2	177.5	-157.8	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.16	2.40	6.16	2.40	HS 48.06	86.5
HS20	10.27	4.01	10.27	4.01	HS 80.09	144.2
2F1	19.63	6.77	19.63	6.77	0.00	101.5
3F1	19.75	4.70	19.75	4.70	0.00	108.2
4F1	18.50	4.34	18.50	4.34	0.00	117.3

5C1

9.42

5.05

9.42

5.05

0.00

202.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00			
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00			
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.92	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.54	146.8
2F1	7.06	8.06	6.31	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.46	6.68	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

9.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.4	0.0	4.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.6	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	2F1	-2.53	16.94	-1.95	13.03	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	23.05	-2.80	17.73	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	23.67	-3.02	18.20	0.00	0.00	0.00	0.00
OPER	5C1	-5.87	21.87	-4.52	16.82	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.44	2.37	HS 47.32	85.2
HS20	24.07	3.94	HS 78.87	142.0
2F1	47.97	6.56	0.00	98.5
3F1	33.35	4.82	0.00	110.9
4F1	30.97	4.70	0.00	126.8
5C1	20.70	5.08	0.00	203.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.3	279.4	-279.4	279.4	-279.4	280.5	-278.3	280.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00	
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00	
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.87	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.79	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.0	19.76	0.400		9.86	8.24	8.24	0.62	1.77
				9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.2	-278.1	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00			
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00			
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00			
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00			
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.41	HS 32.43	58.4
HS20	3.04	6.59	2.70	7.34	HS 54.05	97.3
2F1	4.64	10.11	4.13	11.27	0.00	61.9
3F1	3.65	7.03	3.25	7.83	0.00	74.7
4F1	3.55	6.49	3.16	7.23	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	2F1	-4.03	14.27	-3.10	10.98	0.00	0.00	0.00	0.00
OPER	3F1	-4.39	18.99	-3.38	14.61	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	19.42	-3.02	14.94	0.00	0.00	0.00	0.00
OPER	5C1	-8.12	18.31	-6.25	14.09	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.46	2.97	HS 59.45	107.0
HS20	15.76	4.95	HS 99.08	178.4
2F1	29.66	7.92	0.00	118.8
3F1	27.25	5.95	0.00	136.9
4F1	30.49	5.82	0.00	157.2
5C1	14.74	6.18	0.00	247.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00	
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00	
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00	
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00	
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.69	4.11	1.69	4.11	HS 33.78	60.8
HS20	2.82	6.84	2.82	6.84	HS 56.29	101.3
2F1	4.30	10.50	4.30	10.50	0.00	64.5
3F1	3.38	7.30	3.38	7.30	0.00	77.8
4F1	3.29	6.74	3.29	6.74	0.00	89.0

5C1	3.36	7.13	3.36	7.13	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00			
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00			
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00			
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00			
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.60	5.08	1.42	5.66	HS 28.36	51.0
HS20	2.66	8.47	2.36	9.43	HS 47.26	85.1
2F1	3.88	13.00	3.44	14.46	0.00	51.6
3F1	3.03	9.04	2.69	10.05	0.00	61.8
4F1	2.82	8.34	2.51	9.28	0.00	67.6
5C1	3.06	7.48	2.72	8.32	0.00	108.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	1.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.7	69.0
OPER	151.3	-117.8	114.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	2F1	-6.35	11.53	-4.89	8.87	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	14.95	-5.84	11.50	0.00	0.00	0.00	0.00
OPER	4F1	-6.49	14.93	-4.99	11.48	0.00	0.00	0.00	0.00
OPER	5C1	-10.51	14.92	-8.09	11.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.75	3.70	HS 74.00	133.2
HS20	11.26	6.17	HS 123.33	222.0
2F1	18.54	9.97	0.00	149.5
3F1	15.52	7.69	0.00	176.8
4F1	18.15	7.70	0.00	207.9
5C1	11.21	7.70	0.00	308.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00	
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00	
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00	
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00	
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	5.28	1.48	5.28	HS 29.56	53.2
HS20	2.46	8.79	2.46	8.79	HS 49.27	88.7
2F1	3.59	13.49	3.59	13.49	0.00	53.8
3F1	2.80	9.38	2.80	9.38	0.00	64.4
4F1	2.61	8.66	2.61	8.66	0.00	70.5

5C1	2.83	7.76	2.83	7.76	0.00	113.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	2F1	74.76	L	57.51	202.50	0.0	0.00	0.00	0.00		
		-18.29	R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	R	76.84	222.50	0.0	0.00	0.00	0.00		
		-26.30	R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.34	L	80.26	198.50	0.0	0.00	0.00	0.00		
		-28.43	R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	95.34	L	73.34	161.50	0.0	0.00	0.00	0.00		
		-38.29	R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	5.64	1.44	6.27	HS 28.80	51.8
HS20	2.70	9.39	2.40	10.44	HS 48.00	86.4
2F1	3.80	15.60	3.37	17.35	0.00	50.6
3F1	2.84	10.85	2.52	12.06	0.00	58.0
4F1	2.72	10.03	2.41	11.16	0.00	65.2
5C1	2.98	7.45	2.64	8.29	0.00	105.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-0.4	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-115.9	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	2F1	-8.91	8.83	-6.86	6.80	0.00	0.00	0.00	0.00
OPER	3F1	-11.18	11.07	-8.60	8.52	0.00	0.00	0.00	0.00
OPER	4F1	-10.46	10.32	-8.04	7.94	0.00	0.00	0.00	0.00
OPER	5C1	-12.98	12.17	-9.99	9.36	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.70	4.81	HS 94.06	169.3
HS20	7.84	8.02	HS 156.76	282.2
2F1	13.01	13.22	0.00	195.1
3F1	10.37	10.55	0.00	238.4
4F1	11.09	11.32	0.00	299.4
5C1	8.93	9.60	0.00	357.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	2F1	74.76 L	57.51	202.50	0.0	0.00	0.00	0.00	
		-18.29 R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 R	76.84	222.50	0.0	0.00	0.00	0.00	
		-26.30 R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 L	80.26	198.50	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 L	73.34	161.50	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	5.85	1.50	5.85	HS 30.03	54.1
HS20	2.50	9.74	2.50	9.74	HS 50.05	90.1
2F1	3.52	16.19	3.52	16.19	0.00	52.7
3F1	2.63	11.26	2.63	11.26	0.00	60.5
4F1	2.52	10.41	2.52	10.41	0.00	68.0

5C1	2.76	7.73	2.76	7.73	0.00	110.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00			
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00			
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00			
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.61	4.13	1.43	4.60	HS 28.58	51.5
HS20	2.68	6.88	2.38	7.66	HS 47.64	85.8
2F1	3.92	11.43	3.48	12.73	0.00	52.3
3F1	3.07	7.95	2.73	8.85	0.00	62.7
4F1	2.86	7.35	2.54	8.19	0.00	68.6
5C1	3.19	6.96	2.84	7.75	0.00	113.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

9.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-2.2	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.4	71.3
OPER	151.3	-113.9	118.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	2F1	-11.62	6.29	-8.94	4.84	0.00	0.00	0.00	0.00
OPER	3F1	-15.07	7.48	-11.59	5.75	0.00	0.00	0.00	0.00
OPER	4F1	-15.06	6.33	-11.58	4.87	0.00	0.00	0.00	0.00
OPER	5C1	-15.45	9.64	-11.88	7.41	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.62	7.10	HS 72.31	130.2
HS20	6.03	11.83	HS 120.51	216.9
2F1	9.81	18.90	0.00	147.1
3F1	7.56	15.89	0.00	173.9
4F1	7.57	18.78	0.00	204.3
5C1	7.37	12.33	0.00	295.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00	
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00	
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	4.29	1.49	4.29	HS 29.79	53.6
HS20	2.48	7.15	2.48	7.15	HS 49.64	89.4
2F1	3.63	11.87	3.63	11.87	0.00	54.5
3F1	2.84	8.25	2.84	8.25	0.00	65.3
4F1	2.65	7.63	2.65	7.63	0.00	71.5

5C1	2.96	7.23	2.96	7.23	0.00	118.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00			
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00			
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00			
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00			
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	3.19	1.66	3.56	HS 33.24	59.8
HS20	3.11	5.31	2.77	5.93	HS 55.39	99.7
2F1	4.76	8.82	4.24	9.85	0.00	63.6
3F1	3.74	6.13	3.34	6.85	0.00	76.8
4F1	3.65	5.67	3.25	6.34	0.00	87.9
5C1	3.98	6.16	3.55	6.88	0.00	142.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.0	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	2F1	-14.36	3.98	-11.04	3.06	0.00	0.00	0.00	0.00
OPER	3F1	-19.12	4.27	-14.71	3.28	0.00	0.00	0.00	0.00
OPER	4F1	-19.55	3.52	-15.04	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-18.72	7.32	-14.40	5.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.92	10.08	HS 58.47	105.2
HS20	4.87	16.80	HS 97.45	175.4
2F1	7.80	30.34	0.00	117.1
3F1	5.86	28.27	0.00	134.8
4F1	5.73	34.29	0.00	154.7
5C1	5.99	16.48	0.00	239.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.59	62.3
HS20	2.88	5.52	2.88	5.52	HS 57.65	103.8
2F1	4.41	9.17	4.41	9.17	0.00	66.2
3F1	3.48	6.37	3.48	6.37	0.00	80.0
4F1	3.39	5.90	3.39	5.90	0.00	91.4

5C1	3.70	6.40	3.70	6.40	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00			
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00			
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00			
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00			
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.85	2.52	2.56	2.83	HS 50.35	90.6
HS20	4.75	4.20	4.26	4.71	HS 83.91	151.0
2F1	7.35	6.97	6.59	7.83	0.00	98.9
3F1	6.05	4.85	5.43	5.44	0.00	111.4
4F1	6.57	4.48	5.89	5.03	0.00	121.0
5C1	5.99	5.21	5.37	5.85	0.00	208.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	2F1	-17.02	2.27	-13.09	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.17	3.26	-17.82	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-23.81	3.52	-18.32	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-22.39	5.27	-17.22	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.33	15.76	HS 46.55	83.8
HS20	3.88	26.27	HS 77.58	139.6
2F1	6.47	54.06	0.00	97.1
3F1	4.76	37.58	0.00	109.4
4F1	4.63	34.83	0.00	124.9
5C1	4.92	23.24	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00	
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00	
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00	
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00	
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.66	2.62	2.66	2.62	HS 52.43	94.4
HS20	4.43	4.37	4.43	4.37	HS 87.38	157.3
2F1	6.85	7.26	6.85	7.26	0.00	102.7
3F1	5.64	5.05	5.64	5.05	0.00	116.1
4F1	6.12	4.67	6.12	4.67	0.00	126.0

5C1

5.58

5.42

5.58

5.42

0.00

216.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00			
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00			
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00			
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00			
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.38	1.92	7.56	2.17	HS 38.42	69.2
HS20	13.96	3.20	12.59	3.62	HS 64.04	115.3
2F1	22.71	5.55	20.49	6.28	0.00	83.2
3F1	30.66	3.86	27.66	4.37	0.00	88.7
4F1	32.84	3.57	29.63	4.04	0.00	96.3
5C1	13.67	3.95	12.34	4.48	0.00	158.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

9.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.7
OPER	151.3	-108.3	124.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	2F1	-19.49	2.27	-14.99	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	3.26	-20.81	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	3.53	-21.59	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	3.52	-20.15	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.93	21.47	HS 38.59	69.5
HS20	3.22	35.78	HS 64.32	115.8
2F1	5.56	54.89	0.00	83.4
3F1	4.00	38.15	0.00	92.1
4F1	3.86	35.23	0.00	104.2
5C1	4.14	35.35	0.00	165.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 151.7	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
OPER 252.8	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00	
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00	
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00	
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00	
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.83	2.01	7.83	2.01	HS 40.13	72.2
HS20	13.05	3.34	13.05	3.34	HS 66.88	120.4
2F1	21.24	5.80	21.24	5.80	0.00	86.9
3F1	28.67	4.03	28.67	4.03	0.00	92.7
4F1	30.71	3.73	30.71	3.73	0.00	100.6

5C1	12.78	4.13	12.78	4.13	0.00	165.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	13.15	1.15	10.22	1.62	HS 22.91	41.2
HS20	21.92	1.91	17.04	2.70	HS 38.19	68.7
2F1	33.63	4.39	26.14	6.22	0.00	65.9
3F1	23.38	2.93	18.17	4.15	0.00	67.5
4F1	21.58	2.43	16.78	3.44	0.00	65.7
5C1	28.23	2.68	21.94	3.79	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-7.4	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	2F1	-19.49	22.27	-14.99	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	31.91	-20.81	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	34.28	-21.59	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	30.41	-20.15	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.65	1.77	HS 33.09	59.6
HS20	2.76	2.96	HS 55.15	99.3
2F1	4.91	5.43	0.00	73.7
3F1	3.48	3.79	0.00	80.0
4F1	3.29	3.52	0.00	88.7
5C1	3.59	3.97	0.00	143.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.65 L	14.35 R	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43 L	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35 R	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43 L	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35 R	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43 L	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45 R	180.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53 L	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57 R	177.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35 L	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14 R	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02 L	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.57	1.20	10.57	1.20	HS 24.04	43.3
HS20	17.61	2.00	17.61	2.00	HS 40.06	72.1
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	106.535

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	13.15	1.15	10.22	1.62	HS 22.91	41.2
HS20	21.92	1.91	17.04	2.70	HS 38.19	68.7
2F1	33.63	4.39	26.14	6.22	0.00	65.9
3F1	23.38	2.93	18.17	4.15	0.00	67.5
4F1	21.58	2.43	16.78	3.44	0.00	65.7
5C1	28.23	2.68	21.94	3.79	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-9.1	10.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	2F1	-21.66	22.27	-16.66	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-30.61	31.91	-23.54	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-32.38	34.28	-24.91	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-29.69	30.41	-22.84	23.39	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.65	1.77	HS 33.09	59.6
HS20	2.76	2.96	HS 55.15	99.3
2F1	4.91	5.43	0.00	73.7
3F1	3.48	3.79	0.00	80.0
4F1	3.29	3.52	0.00	88.7
5C1	3.59	3.97	0.00	143.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.57	1.20	10.57	1.20	HS 24.04	43.3
HS20	17.61	2.00	17.61	2.00	HS 40.06	72.1
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00			
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00			
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00			
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00			
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.57	2.58	7.67	2.93	HS 51.60	92.9
HS20	14.28	4.30	12.78	4.88	HS 85.99	154.8
2F1	25.70	7.27	22.99	8.26	0.00	109.0
3F1	24.29	5.05	21.73	5.74	0.00	116.2
4F1	22.75	4.66	20.36	5.30	0.00	126.0
5C1	11.68	5.13	10.45	5.82	0.00	205.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.9	0.0	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-85.2	73.6
OPER	172.1	-142.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	2F1	-0.49	20.47	-0.37	15.74	0.00	0.00	0.00	0.00
OPER	3F1	-0.70	28.87	-0.54	22.21	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	30.41	-0.58	23.39	0.00	0.00	0.00	0.00
OPER	5C1	-1.11	27.42	-0.85	21.09	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	57.06	2.02	HS 40.46	72.8
HS20	95.10	3.37	HS 67.44	121.4
2F1	292.06	6.00	0.00	89.9
3F1	203.01	4.25	0.00	97.8
4F1	188.14	4.04	0.00	109.0
5C1	127.80	4.48	0.00	179.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00	
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00	
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00	
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.95	2.69	7.95	2.69	HS 53.82	96.9
HS20	13.26	4.49	13.26	4.49	HS 89.69	161.4
2F1	23.85	7.58	23.85	7.58	0.00	113.7
3F1	22.55	5.27	22.55	5.27	0.00	121.2
4F1	21.12	4.87	21.12	4.87	0.00	131.4

5C1 10.84 5.35 10.84 5.35 0.00 213.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.1	-1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00		165.00	
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00		165.00	
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00		0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00		0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00		0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00		0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 54.00	97.2
HS20	5.07	5.72	4.50	6.44	HS 90.00	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	130.0
4F1	6.81	5.63	6.05	6.34	0.00	152.1
5C1	5.53	6.46	4.92	7.27	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.1	74.8
OPER	172.1	-140.1	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	2F1	-1.56	18.38	-1.20	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.30	25.44	-1.00	19.57	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	26.13	-0.58	20.10	0.00	0.00	0.00	0.00
OPER	5C1	-2.80	24.15	-2.15	18.58	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.70	2.38	HS 47.63	85.7
HS20	44.50	3.97	HS 79.38	142.9
2F1	89.54	6.78	0.00	101.7
3F1	107.84	4.90	0.00	112.7
4F1	185.62	4.77	0.00	128.8
5C1	50.01	5.16	0.00	206.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.16	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.59	168.5
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.34	5.88	6.34	0.00	135.2
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00			
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00			
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00			
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	4.13	1.64	4.63	HS 32.87	59.2
HS20	3.10	6.89	2.74	7.71	HS 54.78	98.6
2F1	4.88	10.56	4.31	11.83	0.00	64.6
3F1	3.78	7.34	3.33	8.22	0.00	76.6
4F1	3.68	6.78	3.25	7.59	0.00	87.8
5C1	3.81	7.77	3.36	8.70	0.00	134.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	75.9
OPER	172.1	-138.2	126.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	2F1	-3.16	16.05	-2.43	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.43	21.68	-2.64	16.68	0.00	0.00	0.00	0.00
OPER	4F1	-2.52	22.18	-1.94	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.78	20.67	-3.68	15.90	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.07	2.93	HS 58.55	105.4
HS20	26.78	4.88	HS 97.58	175.6
2F1	43.69	7.88	0.00	118.2
3F1	40.27	5.84	0.00	134.2
4F1	54.90	5.71	0.00	154.1
5C1	28.92	6.12	0.00	244.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	4.29	1.71	4.29	HS 34.25	61.7
HS20	2.85	7.15	2.85	7.15	HS 57.09	102.8
2F1	4.49	10.97	4.49	10.97	0.00	67.3
3F1	3.47	7.62	3.47	7.62	0.00	79.9
4F1	3.39	7.04	3.39	7.04	0.00	91.4

5C1 3.51 8.07 3.51 8.07 0.00 140.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00			
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00			
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00			
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00			
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.55	4.99	1.36	5.57	HS 27.26	49.1
HS20	2.59	8.32	2.27	9.29	HS 45.44	81.8
2F1	3.83	12.77	3.36	14.25	0.00	50.4
3F1	2.97	8.88	2.61	9.91	0.00	60.0
4F1	2.77	8.20	2.43	9.15	0.00	65.6
5C1	3.02	9.40	2.65	10.49	0.00	106.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.8	77.1
OPER	172.1	-136.3	128.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	2F1	-5.06	13.52	-3.89	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-6.00	17.64	-4.62	13.57	0.00	0.00	0.00	0.00
OPER	4F1	-5.13	18.09	-3.94	13.92	0.00	0.00	0.00	0.00
OPER	5C1	-6.97	17.52	-5.36	13.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.89	3.81	HS 76.12	137.0
HS20	18.15	6.34	HS 126.87	228.4
2F1	26.94	9.50	0.00	142.5
3F1	22.70	7.28	0.00	167.4
4F1	26.58	7.10	0.00	191.7
5C1	19.54	7.33	0.00	293.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.42	5.18	1.42	5.18	HS 28.46	51.2
HS20	2.37	8.63	2.37	8.63	HS 47.43	85.4
2F1	3.51	13.24	3.51	13.24	0.00	52.6
3F1	2.72	9.20	2.72	9.20	0.00	62.6
4F1	2.54	8.50	2.54	8.50	0.00	68.5

5C1	2.77	9.74	2.77	9.74	0.00	110.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00			
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00			
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00			
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00			
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.44	6.12	1.26	6.82	HS 25.22	45.4
HS20	2.40	10.20	2.10	11.36	HS 42.03	75.7
2F1	3.51	15.66	3.08	17.43	0.00	46.2
3F1	2.58	10.88	2.26	12.12	0.00	51.9
4F1	2.42	10.05	2.12	11.19	0.00	57.2
5C1	2.70	11.52	2.36	12.82	0.00	94.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-80.6	78.2
OPER	172.1	-134.4	130.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	2F1	-7.23	10.81	-5.56	8.32	0.00	0.00	0.00	0.00
OPER	3F1	-9.00	14.12	-6.92	10.86	0.00	0.00	0.00	0.00
OPER	4F1	-8.23	14.21	-6.33	10.93	0.00	0.00	0.00	0.00
OPER	5C1	-9.33	14.97	-7.18	11.52	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.47	4.66	HS 93.29	167.9
HS20	12.45	7.77	HS 155.48	279.9
2F1	18.59	12.05	0.00	180.8
3F1	14.94	9.23	0.00	212.3
4F1	16.33	9.18	0.00	247.7
5C1	14.41	8.70	0.00	348.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.32	6.34	1.32	6.34	HS 26.36	47.4
HS20	2.20	10.57	2.20	10.57	HS 43.93	79.1
2F1	3.22	16.22	3.22	16.22	0.00	48.2
3F1	2.36	11.27	2.36	11.27	0.00	54.2
4F1	2.21	10.41	2.21	10.41	0.00	59.8

5C1	2.47	11.93	2.47	11.93	0.00	98.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00			
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00			
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00			
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00			
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.35	7.70	1.18	8.57	HS 23.59	42.5
HS20	2.25	12.84	1.97	14.29	HS 39.31	70.8
2F1	3.34	19.70	2.92	21.92	0.00	43.8
3F1	2.50	13.69	2.19	15.24	0.00	50.4
4F1	2.34	12.64	2.04	14.07	0.00	55.2
5C1	2.62	14.49	2.29	16.13	0.00	91.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	2F1	-9.63	7.97	-7.41	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-12.38	10.92	-9.53	8.40	0.00	0.00	0.00	0.00
OPER	4F1	-12.28	10.15	-9.44	7.81	0.00	0.00	0.00	0.00
OPER	5C1	-12.15	12.27	-9.35	9.44	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.55	6.22	HS 110.98	199.8
HS20	9.25	10.37	HS 184.97	332.9
2F1	13.74	16.60	0.00	206.2
3F1	10.69	12.12	0.00	245.9
4F1	10.78	13.05	0.00	291.1
5C1	10.89	10.79	0.00	431.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00	
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00	
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00	
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00	
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.23	7.98	1.23	7.98	HS 24.66	44.4
HS20	2.06	13.30	2.06	13.30	HS 41.10	74.0
2F1	3.05	20.41	3.05	20.41	0.00	45.8
3F1	2.29	14.18	2.29	14.18	0.00	52.6
4F1	2.14	13.10	2.14	13.10	0.00	57.7

5C1	2.39	15.01	2.39	15.01	0.00	95.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00			
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00			
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00			
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00			
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.36	10.20	1.19	11.36	HS 23.84	42.9
HS20	2.27	17.01	1.99	18.93	HS 39.73	71.5
2F1	3.53	26.09	3.09	29.05	0.00	46.4
3F1	2.68	18.14	2.35	20.19	0.00	54.0
4F1	2.57	16.75	2.25	18.65	0.00	60.7
5C1	2.77	19.20	2.42	21.37	0.00	97.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	2F1	-12.23	6.07	-9.41	4.67	0.00	0.00	0.00	0.00
OPER	3F1	-16.11	7.59	-12.39	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.89	6.25	-12.22	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.60	9.40	-12.00	7.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.11	8.30	HS 82.21	148.0
HS20	6.85	13.83	HS 137.01	246.6
2F1	10.67	22.14	0.00	160.1
3F1	8.10	17.68	0.00	186.2
4F1	8.21	21.47	0.00	221.7
5C1	8.36	14.29	0.00	334.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00	
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00	
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00	
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00	
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	10.57	1.25	10.57	HS 24.91	44.8
HS20	2.08	17.62	2.08	17.62	HS 41.52	74.7
2F1	3.23	27.03	3.23	27.03	0.00	48.5
3F1	2.45	18.79	2.45	18.79	0.00	56.4
4F1	2.35	17.35	2.35	17.35	0.00	63.5

5C1	2.53	19.89	2.53	19.89	0.00	101.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00			
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00			
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00			
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00			
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.64	15.00	1.44	16.73	HS 28.81	51.9
HS20	2.73	25.00	2.40	27.89	HS 48.02	86.4
2F1	4.42	38.35	3.88	42.79	0.00	58.2
3F1	3.29	26.66	2.89	29.74	0.00	66.5
4F1	3.28	24.61	2.88	27.46	0.00	77.8
5C1	3.39	28.22	2.98	31.48	0.00	119.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-3.4	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.1	81.7
OPER	172.1	-128.6	136.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	2F1	-14.98	4.08	-11.52	3.14	0.00	0.00	0.00	0.00
OPER	3F1	-20.12	4.17	-15.48	3.21	0.00	0.00	0.00	0.00
OPER	4F1	-20.19	3.43	-15.53	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-19.51	6.32	-15.01	4.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.18	12.50	HS 63.68	114.6
HS20	5.31	20.84	HS 106.13	191.0
2F1	8.58	33.34	0.00	128.7
3F1	6.39	32.65	0.00	146.9
4F1	6.37	39.65	0.00	171.9
5C1	6.59	21.55	0.00	263.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	15.55	1.50	15.55	HS 30.08	54.1
HS20	2.51	25.91	2.51	25.91	HS 50.13	90.2
2F1	4.05	39.76	4.05	39.76	0.00	60.8
3F1	3.02	27.64	3.02	27.64	0.00	69.4
4F1	3.01	25.52	3.01	25.52	0.00	81.2

5C1	3.11	29.25	3.11	29.25	0.00	124.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00			
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00			
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00			
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00			
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.76	28.97	2.44	32.44	HS 48.80	87.8
HS20	4.61	48.28	4.07	54.06	HS 81.33	146.4
2F1	7.68	74.08	6.78	82.96	0.00	101.7
3F1	5.63	51.49	4.97	57.66	0.00	114.3
4F1	5.51	47.54	4.86	53.24	0.00	131.3
5C1	5.80	54.50	5.12	61.03	0.00	204.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-5.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.0	82.9
OPER	172.1	-126.7	138.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	2F1	-17.86	2.05	-13.74	1.58	0.00	0.00	0.00	0.00
OPER	3F1	-24.36	2.61	-18.74	2.01	0.00	0.00	0.00	0.00
OPER	4F1	-24.90	2.82	-19.16	2.17	0.00	0.00	0.00	0.00
OPER	5C1	-23.66	4.11	-18.20	3.16	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.55	23.53	HS 51.03	91.9
HS20	4.25	39.22	HS 85.06	153.1
2F1	7.09	67.21	0.00	106.4
3F1	5.20	52.89	0.00	119.6
4F1	5.09	49.02	0.00	137.3
5C1	5.35	33.63	0.00	214.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00	
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00	
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00	
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00	
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	30.07	2.54	30.07	HS 50.85	91.5
HS20	4.24	50.12	4.24	50.12	HS 84.76	152.6
2F1	7.07	76.90	7.07	76.90	0.00	106.0
3F1	5.18	53.45	5.18	53.45	0.00	119.2
4F1	5.07	49.35	5.07	49.35	0.00	136.8

5C1

5.33

56.57

5.33

56.57

0.00

213.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.9	79.9
OPER	172.1	-124.8	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	2F1	-20.82	0.00	-16.01	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.77	0.00	-22.13	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.87	0.00	-22.97	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.99	0.00	-21.53	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.10	30.37	HS 42.01	75.6
HS20	3.50	50.62	HS 70.02	126.0
2F1	5.99	999.00	0.00	89.9
3F1	4.34	999.00	0.00	99.7
4F1	4.18	999.00	0.00	112.8
5C1	4.46	999.00	0.00	178.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.272

Second Live Load Dist. Factor 1.272

Comments:

Member I. D. S04 Symmetry:

Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5
	25.000	25.000	25.000	25.000	25.000
	Span 6	Span 7	Span 8	Span 9	Span 10
	25.000	25.000	25.000	25.000	25.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	25.000	1	0		0.0	0.0
2	1	25.000	2	0		0.0	0.0
3	1	25.000	2	0		0.0	0.0
4	1	25.000	2	0		0.0	0.0
5	1	25.000	2	0		0.0	0.0
6	1	25.000	2	0		0.0	0.0
7	1	25.000	2	0		0.0	0.0
8	1	25.000	2	0		0.0	0.0
9	1	25.000	2	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	615.0	615.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	615.0	615.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	615.0	615.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.000

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.3
OPER	172.1	-139.3	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	2F1	-1.81	20.82	-1.40	16.01	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	28.77	-2.01	22.13	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	29.87	-2.17	22.97	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	27.99	-1.77	21.53	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.32	2.11	HS 42.26	76.1
HS20	52.21	3.52	HS 70.43	126.8
2F1	76.74	6.03	0.00	90.4
3F1	53.34	4.36	0.00	100.3
4F1	49.44	4.20	0.00	113.4
5C1	60.60	4.48	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 1.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00			
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00			
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00			
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00			
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.25	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.5	76.3
OPER	172.1	-137.5	127.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	2F1	-2.05	17.86	-1.58	13.74	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	24.36	-2.01	18.74	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	24.90	-2.17	19.16	0.00	0.00	0.00	0.00
OPER	5C1	-4.11	23.66	-3.16	18.20	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.44	2.56	HS 51.25	92.3
HS20	39.06	4.27	HS 85.42	153.8
2F1	66.95	7.12	0.00	106.9
3F1	52.68	5.22	0.00	120.1
4F1	48.82	5.11	0.00	137.9
5C1	33.50	5.38	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00	0.00
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00	0.00
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00	0.00
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00	0.00
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1

5.36

56.32

5.36

56.32

0.00

214.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00			
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00			
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00			
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00			
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.65	14.88	1.45	16.62	HS 29.08	52.3
HS20	2.76	24.80	2.42	27.69	HS 48.47	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.5	77.4
OPER	172.1	-135.8	128.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	2F1	-4.08	14.98	-3.14	11.52	0.00	0.00	0.00	0.00
OPER	3F1	-4.17	20.12	-3.21	15.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.43	20.19	-2.64	15.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	19.51	-4.86	15.01	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.47	3.19	HS 63.86	114.9
HS20	20.78	5.32	HS 106.43	191.6
2F1	33.25	8.61	0.00	129.1
3F1	32.57	6.41	0.00	147.3
4F1	39.55	6.39	0.00	172.4
5C1	21.49	6.61	0.00	264.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00	
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00	
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00	
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00	
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 1.300 2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00			
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00			
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00			
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00			
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.5	78.4
OPER	172.1	-134.1	130.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	2F1	-6.07	12.23	-4.67	9.41	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	16.11	-5.84	12.39	0.00	0.00	0.00	0.00
OPER	4F1	-6.25	15.89	-4.81	12.22	0.00	0.00	0.00	0.00
OPER	5C1	-9.40	15.60	-7.23	12.00	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.29	4.12	HS 82.32	148.2
HS20	13.82	6.86	HS 137.20	247.0
2F1	22.11	10.69	0.00	160.3
3F1	17.66	8.11	0.00	186.5
4F1	21.45	8.22	0.00	222.0
5C1	14.27	8.38	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00	
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00	
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00	
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00	
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00			
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00			
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00			
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00			
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	2F1	-7.97	9.63	-6.13	7.41	0.00	0.00	0.00	0.00
OPER	3F1	-10.92	12.38	-8.40	9.53	0.00	0.00	0.00	0.00
OPER	4F1	-10.15	11.80	-7.81	9.08	0.00	0.00	0.00	0.00
OPER	5C1	-12.27	12.15	-9.44	9.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.22	5.55	HS 110.98	199.8
HS20	10.38	9.25	HS 184.96	332.9
2F1	16.60	13.74	0.00	206.1
3F1	12.12	10.69	0.00	245.9
4F1	13.05	11.22	0.00	302.9
5C1	10.79	10.89	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00	
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00	
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00	
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00	
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00			
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00			
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00			
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00			
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	6.06	1.28	6.76	HS 25.52	45.9
HS20	2.42	10.11	2.13	11.26	HS 42.53	76.6
2F1	3.55	15.51	3.11	17.28	0.00	46.7
3F1	2.60	10.78	2.28	12.01	0.00	52.5
4F1	2.45	9.95	2.14	11.09	0.00	57.9
5C1	2.73	11.41	2.39	12.72	0.00	95.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.7	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	2F1	-10.81	7.23	-8.32	5.56	0.00	0.00	0.00	0.00
OPER	3F1	-14.12	9.00	-10.86	6.92	0.00	0.00	0.00	0.00
OPER	4F1	-14.21	8.23	-10.93	6.33	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.33	-11.52	7.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.68	7.45	HS 93.51	168.3
HS20	7.79	12.42	HS 155.86	280.5
2F1	12.08	18.55	0.00	181.2
3F1	9.25	14.90	0.00	212.8
4F1	9.20	16.29	0.00	248.3
5C1	8.73	14.37	0.00	349.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00	
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00	
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00	
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00	
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00			
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00			
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00			
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00			
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.3	81.6
OPER	172.1	-128.8	135.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	2F1	-13.52	5.06	-10.40	3.89	0.00	0.00	0.00	0.00
OPER	3F1	-17.64	6.00	-13.57	4.62	0.00	0.00	0.00	0.00
OPER	4F1	-18.09	5.13	-13.92	3.94	0.00	0.00	0.00	0.00
OPER	5C1	-17.52	6.97	-13.48	5.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.82	10.86	HS 76.34	137.4
HS20	6.36	18.10	HS 127.23	229.0
2F1	9.53	26.87	0.00	142.9
3F1	7.30	22.64	0.00	167.9
4F1	7.12	26.51	0.00	192.2
5C1	7.35	19.49	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.700
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00			
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00			
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00			
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.5	-4.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	103.3	-76.3	82.6	
OPER	172.1	-127.1	137.7	

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	2F1	-16.05	3.16	-12.35	2.43	0.00	0.00	0.00	0.00
OPER	3F1	-21.68	3.43	-16.68	2.64	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.52	-17.06	1.94	0.00	0.00	0.00	0.00
OPER	5C1	-20.67	4.78	-15.90	3.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.94	16.00	HS 58.80	105.8
HS20	4.90	26.67	HS 98.00	176.4
2F1	7.92	43.52	0.00	118.7
3F1	5.86	40.11	0.00	134.8
4F1	5.73	54.68	0.00	154.7
5C1	6.15	28.80	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00	
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00	
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00	
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.72	4.27	1.72	4.27	HS 34.42	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1

3.52

8.03

3.52

8.03

0.00

140.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.2	19.76	0.460		9.86	8.30	8.30	0.74	1.81
				9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00			
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00			
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00			
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00			
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.7 -6.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.2	83.6
OPER	172.1	-125.4	139.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	2F1	-18.38	1.56	-14.14	1.20	0.00	0.00	0.00	0.00
OPER	3F1	-25.44	1.30	-19.57	1.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.13	0.75	-20.10	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-24.15	2.80	-18.58	2.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.40	26.56	HS 47.91	86.2
HS20	3.99	44.27	HS 79.85	143.7
2F1	6.82	89.07	0.00	102.3
3F1	4.93	107.27	0.00	113.3
4F1	4.80	184.65	0.00	129.6
5C1	5.19	49.75	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00	
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00	
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00	
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00	
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00			
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00			
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00			
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	8.68	2.60	7.76	2.95	HS 51.97	93.5
HS20	14.47	4.33	12.94	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.85	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

1.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.9	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.2	84.7
OPER	172.1	-123.6	141.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	2F1	-20.47	0.49	-15.74	0.37	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	0.70	-22.21	0.54	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	0.75	-23.39	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	1.11	-21.09	0.85	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.04	56.69	HS 40.77	73.4
HS20	3.40	94.49	HS 67.94	122.3
2F1	6.04	290.18	0.00	90.6
3F1	4.28	201.70	0.00	98.5
4F1	4.07	186.92	0.00	109.8
5C1	4.51	126.98	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00	
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00	
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00	
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.05	2.71	8.05	2.71	HS 54.19	97.5
HS20	13.42	4.52	13.42	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1 10.77 5.39 10.77 5.39 0.00 215.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.10	1.16	10.07	1.33	HS 23.26	41.9
HS20	18.50	1.94	16.79	2.21	HS 38.76	69.8
2F1	28.39	4.49	25.76	5.13	0.00	67.3
3F1	19.73	3.00	17.90	3.42	0.00	68.9
4F1	18.22	2.49	16.53	2.84	0.00	67.1
5C1	23.83	2.74	21.62	3.13	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-7.8	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	2F1	-20.47	21.85	-15.74	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	30.77	-22.21	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	32.52	-23.39	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	29.85	-21.09	22.96	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.131

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.10	1.16	10.07	1.33	HS 23.26	41.9
HS20	18.50	1.94	16.79	2.21	HS 38.76	69.8
2F1	28.39	4.49	25.76	5.13	0.00	67.3
3F1	19.73	3.00	17.90	3.42	0.00	68.9
4F1	18.22	2.49	16.53	2.84	0.00	67.1
5C1	23.83	2.74	21.62	3.13	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-9.4	8.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	2F1	-22.27	21.85	-17.13	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-31.91	30.77	-24.55	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-34.28	32.52	-26.37	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-30.41	29.85	-23.39	22.96	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.100
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -2.6
 Superimposed Dead Load Moment -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00			
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00			
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00			
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00			
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.15	1.94	7.34	2.19	HS 38.82	69.9
HS20	13.58	3.23	12.24	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.2	65.4
OPER	151.3	-123.7	109.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	2F1	-2.27	19.49	-1.74	14.99	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	27.06	-2.51	20.81	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	28.06	-2.71	21.59	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	26.19	-2.71	20.15	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.26	1.94	HS 38.87	70.0
HS20	37.10	3.24	HS 64.78	116.6
2F1	54.55	5.60	0.00	84.0
3F1	37.92	4.03	0.00	92.7
4F1	35.14	3.89	0.00	104.9
5C1	35.13	4.16	0.00	166.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.61	2.03	7.61	2.03	HS 40.53	73.0
HS20	12.69	3.38	12.69	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00			
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00			
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00			
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00			
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.87	0.00	209.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-122.0	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	2F1	-2.27	17.02	-1.74	13.09	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	23.17	-2.51	17.82	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	23.81	-2.71	18.32	0.00	0.00	0.00	0.00
OPER	5C1	-5.27	22.39	-4.06	17.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.69	2.34	HS 46.80	84.2
HS20	26.15	3.90	HS 77.99	140.4
2F1	53.80	6.51	0.00	97.6
3F1	37.40	4.78	0.00	109.9
4F1	34.66	4.65	0.00	125.6
5C1	23.13	4.95	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 2.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00	
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00	
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00	
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00	
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1

5.56

5.44

5.56

5.44

0.00

217.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.0	19.76	0.400		9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00			
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00			
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00			
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	2F1	-3.98	14.36	-3.06	11.04	0.00	0.00	0.00	0.00
OPER	3F1	-4.27	19.12	-3.28	14.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	19.55	-2.71	15.04	0.00	0.00	0.00	0.00
OPER	5C1	-7.32	18.72	-5.63	14.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.04	2.93	HS 58.69	105.6
HS20	16.74	4.89	HS 97.81	176.1
2F1	30.24	7.83	0.00	117.5
3F1	28.18	5.88	0.00	135.3
4F1	34.18	5.75	0.00	155.3
5C1	16.43	6.01	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00			
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00			
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00			
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	2F1	-6.29	11.62	-4.84	8.94	0.00	0.00	0.00	0.00
OPER	3F1	-7.48	15.07	-5.75	11.59	0.00	0.00	0.00	0.00
OPER	4F1	-6.33	15.06	-4.87	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.64	15.88	-7.41	12.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.08	3.62	HS 72.45	130.4
HS20	11.81	6.04	HS 120.75	217.4
2F1	18.86	9.82	0.00	147.4
3F1	15.86	7.58	0.00	174.2
4F1	18.75	7.58	0.00	204.7
5C1	12.31	7.19	0.00	287.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00	
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00	
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	2F1	74.76	R	57.51	47.50	0.0	0.00	0.00	0.00		
		-18.29	L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	L	76.84	27.50	0.0	0.00	0.00	0.00		
		-26.30	L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	R	80.26	51.50	0.0	0.00	0.00	0.00		
		-28.44	L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	R	73.34	88.50	0.0	0.00	0.00	0.00		
		-38.29	L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	5.60	1.45	6.24	HS 28.98	52.2
HS20	2.72	9.34	2.41	10.39	HS 48.31	87.0
2F1	3.82	15.51	3.39	17.26	0.00	50.9
3F1	2.86	10.79	2.54	12.00	0.00	58.4
4F1	2.74	9.98	2.43	11.10	0.00	65.6
5C1	2.99	7.41	2.66	8.24	0.00	106.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.1	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	2F1	-8.83	8.91	-6.80	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-11.07	11.18	-8.52	8.60	0.00	0.00	0.00	0.00
OPER	4F1	-10.32	10.46	-7.94	8.04	0.00	0.00	0.00	0.00
OPER	5C1	-12.17	12.98	-9.36	9.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.82	4.70	HS 93.99	169.2
HS20	8.03	7.83	HS 156.65	282.0
2F1	13.23	13.00	0.00	194.9
3F1	10.56	10.36	0.00	238.3
4F1	11.32	11.08	0.00	299.2
5C1	9.61	8.92	0.00	357.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	2F1	74.76 R	57.51	47.50	0.0	0.00	0.00	0.00	
		-18.29 L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 L	76.84	27.50	0.0	0.00	0.00	0.00	
		-26.30 L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 R	80.26	51.50	0.0	0.00	0.00	0.00	
		-28.44 L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 R	73.34	88.50	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.600
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.1
 Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00			
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00			
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00			
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00			
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS 28.53	51.3
HS20	2.68	8.43	2.38	9.38	HS 47.54	85.6
2F1	3.89	12.93	3.46	14.40	0.00	51.9
3F1	3.04	8.99	2.70	10.01	0.00	62.2
4F1	2.84	8.30	2.52	9.24	0.00	68.0
5C1	3.08	7.44	2.73	8.28	0.00	109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.1	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	2F1	-11.53	6.35	-8.87	4.89	0.00	0.00	0.00	0.00
OPER	3F1	-14.95	7.59	-11.50	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-14.93	6.49	-11.48	4.99	0.00	0.00	0.00	0.00
OPER	5C1	-14.92	10.51	-11.48	8.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.70	6.75	HS 74.08	133.4
HS20	6.17	11.24	HS 123.47	222.3
2F1	9.98	18.52	0.00	149.7
3F1	7.70	15.50	0.00	177.0
4F1	7.71	18.12	0.00	208.2
5C1	7.71	11.19	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00	
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00	
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00	
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00	
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00			
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00			
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00			
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00			
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.83	3.94	1.63	4.39	HS 32.55	58.6
HS20	3.05	6.57	2.71	7.32	HS 54.25	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.0	71.6
OPER	151.3	-113.4	119.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	2F1	-14.27	4.03	-10.98	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.99	4.39	-14.61	3.38	0.00	0.00	0.00	0.00
OPER	4F1	-19.42	3.93	-14.94	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-18.31	8.12	-14.09	6.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.98	9.43	HS 59.62	107.3
HS20	4.97	15.72	HS 99.36	178.9
2F1	7.95	29.58	0.00	119.2
3F1	5.97	27.18	0.00	137.3
4F1	5.84	30.41	0.00	157.6
5C1	6.19	14.70	0.00	247.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00	
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00	
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00	
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00	
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00			
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00			
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.6
OPER	151.3	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	2F1	-16.94	2.53	-13.03	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-23.05	3.64	-17.73	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-23.67	3.93	-18.20	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-21.87	5.87	-16.82	4.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	14.38	HS 47.54	85.6
HS20	3.96	23.97	HS 79.23	142.6
2F1	6.59	47.78	0.00	98.9
3F1	4.84	33.22	0.00	111.4
4F1	4.72	30.84	0.00	127.4
5C1	5.11	20.61	0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00	
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00	
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00		37.50	
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00		37.50	
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00		0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00		0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00		0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00		0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.68	2.32	6.00	2.61	HS 46.38	83.5
HS20	11.14	3.87	10.01	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

2.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6 -5.8 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.6
OPER	151.3	-110.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	2F1	-19.43	2.53	-14.95	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	3.64	-20.74	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	3.94	-21.49	3.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	3.90	-19.58	3.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.97	17.50	HS 39.46	71.0
HS20	3.29	29.16	HS 65.77	118.4
2F1	5.66	48.44	0.00	84.9
3F1	4.08	33.68	0.00	93.9
4F1	3.94	31.15	0.00	106.3
5C1	4.32	31.51	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.23	2.42	6.23	2.42	HS 48.34	87.0
HS20	10.39	4.03	10.39	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1 9.37 5.08 9.37 5.08 0.00 203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	2F1	-19.43	21.64	-14.95	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	30.57	-20.74	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	32.33	-21.49	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	28.84	-19.58	22.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00		40.00	
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00		40.00	
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00		0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00		0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00		0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00		0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.3	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	2F1	-21.63	21.64	-16.64	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.54	30.57	-23.49	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-32.28	32.33	-24.83	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.86	28.84	-22.20	22.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.100
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -1.2
 Superimposed Dead Load Moment -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00			
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00			
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00			
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00			
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.53	2.34	5.87	2.63	HS 46.78	84.2
HS20	10.89	3.90	9.78	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	2F1	-2.26	19.45	-1.74	14.97	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.47	-2.71	19.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.56	1.96	HS 39.26	70.7
HS20	34.26	3.27	HS 65.44	117.8
2F1	54.57	5.64	0.00	84.5
3F1	37.93	4.06	0.00	93.4
4F1	35.15	3.92	0.00	105.7
5C1	34.94	4.31	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00	
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00	
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00	
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00	
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.09	2.44	6.09	2.44	HS 48.76	87.8
HS20	10.15	4.06	10.15	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00			
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00			
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00			
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00			
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.85	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5	0.0	4.6
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.8	66.8
OPER	151.3	-121.4	111.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	2F1	-2.26	16.97	-1.74	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.78	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.72	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.65	2.36	HS 47.27	85.1
HS20	24.41	3.94	HS 78.78	141.8
2F1	53.82	6.56	0.00	98.4
3F1	37.41	4.82	0.00	110.8
4F1	34.67	4.70	0.00	126.8
5C1	22.95	5.08	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1 4.54 6.28 4.54 6.28 0.00 181.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00			
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00			
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00			
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00			
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3	0.0	3.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	2F1	-4.01	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.06	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.57	2.96	HS 59.26	106.7
HS20	15.95	4.94	HS 98.76	177.8
2F1	29.82	7.90	0.00	118.5
3F1	27.39	5.93	0.00	136.4
4F1	34.18	5.80	0.00	156.7
5C1	16.27	6.16	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1	3.31	7.21	3.31	7.21	0.00	132.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00			
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00			
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00			
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00			
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	1.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.8	68.8
OPER	151.3	-118.0	114.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	2F1	-6.32	11.58	-4.86	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	15.00	-4.97	11.54	0.00	0.00	0.00	0.00
OPER	5C1	-9.68	14.97	-7.45	11.51	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.83	3.69	HS 73.75	132.8
HS20	11.38	6.15	HS 122.92	221.3
2F1	18.67	9.91	0.00	148.6
3F1	15.63	7.64	0.00	175.8
4F1	18.26	7.65	0.00	206.5
5C1	12.19	7.66	0.00	306.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00	
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00	
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00	
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00	
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00			
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00			
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00			
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.1	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	2F1	-8.87	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.14	-8.56	8.57	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-7.99	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.19	-9.40	9.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.58	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.4
4F1	11.19	11.20	0.00	302.3
5C1	9.52	9.56	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00	
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00	
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.5	15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00			
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00			
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.09	1.40	5.66	HS 28.01	50.4
HS20	2.63	8.49	2.33	9.44	HS 46.69	84.0
2F1	3.85	13.02	3.41	14.49	0.00	51.2
3F1	3.01	9.05	2.67	10.07	0.00	61.3
4F1	2.80	8.36	2.49	9.30	0.00	67.1
5C1	3.04	7.58	2.70	8.43	0.00	107.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.2	-1.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	2F1	-11.57	6.33	-8.90	4.87	0.00	0.00	0.00	0.00
OPER	3F1	-15.00	7.56	-11.54	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.66	-11.51	7.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.90	HS 73.59	132.5
HS20	6.13	11.50	HS 122.64	220.8
2F1	9.89	18.69	0.00	148.4
3F1	7.63	15.65	0.00	175.5
4F1	7.64	18.29	0.00	206.2
5C1	7.65	12.24	0.00	306.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00	
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00	
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1	2.81	7.86	2.81	7.86	0.00	112.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

3.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.65	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.48	-14.98	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.34	-14.12	5.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.70	HS 59.15	106.5
HS20	4.93	16.17	HS 98.58	177.4
2F1	7.88	29.86	0.00	118.3
3F1	5.92	27.43	0.00	136.2
4F1	5.79	34.43	0.00	156.4
5C1	6.14	16.34	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1 3.35 7.15 3.35 7.15 0.00 133.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	73.0
OPER	151.3	-111.1	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	2F1	-16.97	2.24	-13.05	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.23	-17.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.48	-18.24	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.28	-16.86	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.94	HS 47.18	84.9
HS20	3.93	24.90	HS 78.63	141.5
2F1	6.55	54.20	0.00	98.2
3F1	4.81	37.68	0.00	110.6
4F1	4.69	34.92	0.00	126.5
5C1	5.07	23.06	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00			
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.82	2.31	6.13	2.60	HS 46.10	83.0
HS20	11.37	3.84	10.22	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	2F1	-19.45	2.24	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.23	-20.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	3.50	-21.53	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.51	-19.61	2.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	21.21	HS 39.18	70.5
HS20	3.27	35.35	HS 65.30	117.5
2F1	5.62	54.96	0.00	84.4
3F1	4.05	38.20	0.00	93.2
4F1	3.91	35.27	0.00	105.5
5C1	4.29	35.16	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00	
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.36	2.40	6.36	2.40	HS 48.06	86.5
HS20	10.60	4.01	10.60	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00			
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.3	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.90	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.9	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.32	32.33	-24.86	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.90	-22.22	22.23	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00			
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00			
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00			
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00			
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.74	2.30	6.06	2.60	HS 46.08	82.9
HS20	11.24	3.84	10.10	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.50	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.82	1.96	HS 39.21	70.6
HS20	34.69	3.27	HS 65.35	117.6
2F1	54.66	5.63	0.00	84.4
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	35.00	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.29	2.40	6.29	2.40	HS 48.04	86.5
HS20	10.48	4.00	10.48	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00			
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00			
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00			
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00			
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.52	HS 49.05	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.75	147.1
2F1	7.08	8.05	6.33	9.01	0.00	94.9
3F1	5.80	5.59	5.19	6.26	0.00	119.3
4F1	6.30	5.17	5.63	5.78	0.00	139.5
5C1	5.00	5.96	4.47	6.67	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

4.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5	0.0	4.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.77	2.36	HS 47.21	85.0
HS20	24.62	3.93	HS 78.68	141.6
2F1	53.91	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.73	4.69	0.00	126.6
5C1	22.98	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.6	167.0	-168.3	167.0	-168.3	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00	
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00	
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00	
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00	
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00			
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

4.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3

0.0

3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.9	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.96	HS 59.18	106.5
HS20	16.05	4.93	HS 98.64	177.5
2F1	29.85	7.89	0.00	118.3
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.29	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00	
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.4	14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00			
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.41	5.65	HS 28.11	50.6
HS20	2.64	8.46	2.34	9.41	HS 46.85	84.3
2F1	3.86	12.99	3.43	14.45	0.00	51.4
3F1	3.02	9.03	2.68	10.04	0.00	61.6
4F1	2.81	8.34	2.49	9.27	0.00	67.4
5C1	3.05	7.55	2.71	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.7
OPER	151.3	-118.2	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.64	132.5
HS20	11.44	6.14	HS 122.73	220.9
2F1	18.69	9.90	0.00	148.5
3F1	15.64	7.63	0.00	175.6
4F1	18.28	7.64	0.00	206.3
5C1	12.20	7.65	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00	
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50			
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00		
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.57	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.5	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.53	172.0
HS20	7.97	7.96	HS 159.22	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.0
5C1	9.53	9.51	0.00	380.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.74	2.49	11.74	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.4	14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	0.00
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	0.00
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	0.00
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	0.00
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-68.8 70.9
OPER	151.3	-114.6 118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	2F1	-11.57	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	3.68	6.84	HS 73.68	132.6
HS20	6.14	11.40	HS 122.80	221.0
2F1	9.90	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.7
4F1	7.65	18.27	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.9
OPER	151.3	-113.0	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.59	HS 59.22	106.6
HS20	4.93	15.99	HS 98.70	177.7
2F1	7.89	29.83	0.00	118.4
3F1	5.93	27.41	0.00	136.4
4F1	5.80	34.24	0.00	156.6
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
Check Point I. D. 4.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00		160.00	
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00		160.00	
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00		0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00		0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00		0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00		0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.9
OPER	151.3	-111.3	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.69	HS 47.24	85.0
HS20	3.94	24.48	HS 78.73	141.7
2F1	6.56	53.90	0.00	98.3
3F1	4.82	37.46	0.00	110.8
4F1	4.69	34.72	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50		
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50		
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.76	2.31	6.07	2.60	HS 46.18	83.1
HS20	11.26	3.85	10.12	4.34	HS 76.97	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.16	4.52	19.03	5.10	0.00	104.0
4F1	19.82	4.18	17.82	4.70	0.00	112.8
5C1	10.10	4.85	9.08	5.47	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-6.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.53	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.67	HS 39.23	70.6
HS20	3.27	34.44	HS 65.39	117.7
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.07	0.00	105.7
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.30	2.41	6.30	2.41	HS 48.15	86.7
HS20	10.51	4.01	10.51	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00		90.00	
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.64	2.31	5.97	2.60	HS 46.19	83.2
HS20	11.07	3.85	9.95	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.68	1.96	HS 39.22	70.6
HS20	34.47	3.27	HS 65.37	117.7
2F1	54.64	5.63	0.00	84.5
3F1	37.98	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
ber								
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.41	6.20	2.41	HS 48.16	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1 9.43 5.06 9.43 5.06 0.00 202.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.70	2.36	HS 47.23	85.0
HS20	24.50	3.94	HS 78.71	141.7
2F1	53.89	6.55	0.00	98.3
3F1	37.46	4.81	0.00	110.7
4F1	34.71	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	2.96	HS 59.21	106.6
HS20	16.00	4.93	HS 98.68	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.3
4F1	34.23	5.80	0.00	156.5
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.63	8.47	2.34	9.42	HS 46.78	84.2
2F1	3.85	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.04	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.66	132.6
HS20	11.41	6.14	HS 122.77	221.0
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.7
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.96	HS 159.28	286.7
2F1	13.11	13.10	0.00	196.6
3F1	10.46	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1 2.73 8.17 2.73 8.17 0.00 109.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00		
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.65	132.6
HS20	6.14	11.42	HS 122.75	220.9
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.61	HS 59.19	106.6
HS20	4.93	16.02	HS 98.66	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.28	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 5.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00		
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00		
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.61	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.73	HS 47.22	85.0
HS20	3.93	24.55	HS 78.70	141.7
2F1	6.55	53.90	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.97	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.77	2.31	6.09	2.60	HS 46.15	83.1
HS20	11.29	3.85	10.15	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.74	HS 39.22	70.6
HS20	3.27	34.56	HS 65.36	117.6
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	34.99	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.32	2.41	6.32	2.41	HS 48.12	86.6
HS20	10.53	4.01	10.53	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1

9.43

5.06

9.43

5.06

0.00

202.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00			
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00		135.00	
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00		0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.66	2.31	5.99	2.60	HS 46.15	83.1
HS20	11.10	3.85	9.98	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

6.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.74	1.96	HS 39.22	70.6
HS20	34.56	3.27	HS 65.36	117.6
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.21	2.41	6.21	2.41	HS 48.12	86.6
HS20	10.36	4.01	10.36	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1

9.43

5.06

9.43

5.06

0.00

202.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

6.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5

0.0

4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.73	2.36	HS 47.22	85.0
HS20	24.55	3.93	HS 78.70	141.7
2F1	53.90	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.72	4.69	0.00	126.6
5C1	22.97	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24	R	74.03	160.50	0.0	72.56	55.82	132.50		
		-42.27	L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00	
OPER	HS20	96.24	R	74.03	160.50	0.0	72.56	55.82	132.50		
		-42.27	L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00	
OPER	2F1	62.87	R	48.36	142.50	0.0	0.00	0.00	0.00		
		-27.55	L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	79.89	R	61.46	146.50	0.0	0.00	0.00	0.00		
		-39.63	L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	82.06	R	63.13	146.50	0.0	0.00	0.00	0.00		
		-42.92	L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	80.57	L	61.98	85.50	0.0	0.00	0.00	0.00		
		-40.45	L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.61	2.96	HS 59.19	106.6
HS20	16.02	4.93	HS 98.66	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.28	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.65	132.6
HS20	11.42	6.14	HS 122.75	220.9
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.6
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.0	19.76	0.400		9.86	8.24	8.24	0.62	1.77
				9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50			
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00		
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.55	172.0
HS20	7.97	7.96	HS 159.25	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1 2.73 8.17 2.73 8.17 0.00 109.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.4	14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00		0.00	
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00		0.00	
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00		0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00		0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00		0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00		0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.63	8.47	2.34	9.42	HS 46.78	84.2
2F1	3.85	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.04	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.66	132.6
HS20	6.14	11.41	HS 122.77	221.0
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.7
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

6.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.3	-3.1	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.60	HS 59.21	106.6
HS20	4.93	16.00	HS 98.68	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.41	0.00	136.3
4F1	5.80	34.23	0.00	156.5
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.76	0.400	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -0.1
 Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.29	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

6.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.70	HS 47.23	85.0
HS20	3.94	24.50	HS 78.71	141.7
2F1	6.55	53.89	0.00	98.3
3F1	4.81	37.46	0.00	110.7
4F1	4.69	34.71	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.75	2.31	6.07	2.60	HS 46.20	83.2
HS20	11.26	3.85	10.12	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

6.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.68	HS 39.22	70.6
HS20	3.27	34.47	HS 65.37	117.7
2F1	5.63	54.64	0.00	84.5
3F1	4.06	37.98	0.00	93.3
4F1	3.91	35.07	0.00	105.6
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.30	2.41	6.30	2.41	HS 48.16	86.7
HS20	10.50	4.01	10.50	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03	R	13.87	180.50	0.0	28.60	22.00	152.50		
		-65.63	R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50	
OPER	HS20	18.03	R	13.87	180.50	0.0	28.60	22.00	152.50		
		-65.63	R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50	
OPER	2F1	15.01	R	11.55	162.50	0.0	0.00	0.00	0.00		
		-38.82	L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	14.96	L	11.51	105.00	0.0	0.00	0.00	0.00		
		-55.85	L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.98	L	12.29	101.00	0.0	0.00	0.00	0.00		
		-60.48	L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	31.34	L	24.11	105.50	0.0	0.00	0.00	0.00		
		-52.05	L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.64	2.31	5.97	2.60	HS 46.18	83.1
HS20	11.07	3.85	9.95	4.34	HS 76.97	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.16	4.52	19.03	5.10	0.00	104.0
4F1	19.82	4.18	17.82	4.70	0.00	112.8
5C1	10.10	4.85	9.08	5.47	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.49	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.67	1.96	HS 39.23	70.6
HS20	34.44	3.27	HS 65.39	117.7
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.7
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.41	6.20	2.41	HS 48.15	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

7.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.5	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.49	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.69	2.36	HS 47.24	85.0
HS20	24.48	3.94	HS 78.73	141.7
2F1	53.90	6.56	0.00	98.3
3F1	37.46	4.82	0.00	110.8
4F1	34.72	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.8	8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.59	2.96	HS 59.22	106.6
HS20	15.99	4.93	HS 98.70	177.7
2F1	29.83	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.4
4F1	34.24	5.80	0.00	156.6
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	2F1	-6.32	11.57	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.84	3.68	HS 73.68	132.6
HS20	11.40	6.14	HS 122.80	221.0
2F1	18.67	9.90	0.00	148.6
3F1	15.63	7.64	0.00	175.7
4F1	18.27	7.65	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50			
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00		
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00			
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00			
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00			
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.56	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.59	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.2
5C1	9.52	9.52	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.73	2.49	11.73	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00			
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.41	5.65	HS 28.11	50.6
HS20	2.64	8.46	2.34	9.41	HS 46.85	84.3
2F1	3.86	12.99	3.43	14.45	0.00	51.4
3F1	3.02	9.03	2.68	10.04	0.00	61.6
4F1	2.81	8.34	2.49	9.27	0.00	67.4
5C1	3.05	7.55	2.71	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.6	118.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.64	132.5
HS20	6.14	11.44	HS 122.73	220.9
2F1	9.90	18.69	0.00	148.5
3F1	7.63	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.3
5C1	7.65	12.20	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00	
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.8	8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00			
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.63	HS 59.18	106.5
HS20	4.93	16.05	HS 98.64	177.5
2F1	7.89	29.85	0.00	118.3
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.29	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00	
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00		
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00			
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00			
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00			
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00			
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.52	HS 49.05	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.75	147.1
2F1	7.08	8.05	6.33	9.01	0.00	94.9
3F1	5.80	5.59	5.19	6.26	0.00	119.3
4F1	6.30	5.17	5.63	5.78	0.00	139.5
5C1	5.00	5.96	4.47	6.67	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.77	HS 47.21	85.0
HS20	3.93	24.62	HS 78.68	141.6
2F1	6.55	53.91	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.98	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	167.0	-168.3	167.0	-168.3	168.6	-166.6	168.6	-
166.6								
OPER	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-
277.7								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00			
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00			
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00			
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.30	6.17	2.60	HS 46.08	82.9
HS20	11.43	3.84	10.28	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

7.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.82	HS 39.21	70.6
HS20	3.27	34.69	HS 65.35	117.6
2F1	5.63	54.66	0.00	84.4
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	35.00	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00	
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00	
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00	
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00	
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.40	2.40	6.40	2.40	HS 48.04	86.5
HS20	10.67	4.00	10.67	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00			
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	28.89	-19.61	22.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.9

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-28.90	28.89	-22.23	22.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00		0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00		0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00		0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00		0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.70	2.31	6.03	2.60	HS 46.10	83.0
HS20	11.18	3.84	10.05	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.3	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	2F1	-2.24	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	27.00	-2.48	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	27.99	-2.68	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.51	25.49	-2.70	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.21	1.96	HS 39.18	70.5
HS20	35.35	3.27	HS 65.30	117.5
2F1	54.96	5.62	0.00	84.4
3F1	38.20	4.05	0.00	93.2
4F1	35.40	3.91	0.00	105.5
5C1	35.16	4.29	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.26	2.40	6.26	2.40	HS 48.06	86.5
HS20	10.43	4.01	10.43	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00		
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.7
OPER	151.3	-121.6	111.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	2F1	-2.24	16.97	-1.73	13.05	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	23.10	-2.48	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	23.71	-2.68	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	21.92	-4.06	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.94	2.36	HS 47.18	84.9
HS20	24.90	3.93	HS 78.63	141.5
2F1	54.20	6.55	0.00	98.2
3F1	37.68	4.81	0.00	110.6
4F1	34.92	4.69	0.00	126.5
5C1	23.06	5.07	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1 4.64 6.21 4.64 6.21 0.00 185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.65	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	19.48	-2.68	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.34	18.36	-5.65	14.12	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.70	2.96	HS 59.15	106.5
HS20	16.17	4.93	HS 98.58	177.4
2F1	29.86	7.88	0.00	118.3
3F1	27.43	5.92	0.00	136.2
4F1	34.43	5.79	0.00	156.4
5C1	16.34	6.14	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00			
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00			
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.58	5.09	1.40	5.66	HS 28.01	50.4
HS20	2.63	8.49	2.33	9.44	HS 46.69	84.0
2F1	3.85	13.02	3.41	14.48	0.00	51.2
3F1	3.01	9.05	2.67	10.07	0.00	61.3
4F1	2.80	8.36	2.49	9.30	0.00	67.1
5C1	3.04	7.58	2.70	8.43	0.00	107.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	2F1	-6.33	11.57	-4.87	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.56	15.00	-5.81	11.54	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.66	14.97	-7.43	11.51	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.90	3.68	HS 73.59	132.5
HS20	11.50	6.13	HS 122.64	220.8
2F1	18.69	9.89	0.00	148.4
3F1	15.65	7.63	0.00	175.5
4F1	18.29	7.64	0.00	206.2
5C1	12.24	7.65	0.00	306.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00	
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00	
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1	2.81	7.86	2.81	7.86	0.00	112.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50			
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00		
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50			
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00		
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00			
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00			
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00			
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00			
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	2F1	-8.88	8.87	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.14	11.13	-8.57	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	7.99	0.00	0.00	0.00	0.00
OPER	5C1	-12.19	12.22	-9.37	9.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.79	4.77	HS 95.48	171.9
HS20	7.98	7.96	HS 159.13	286.4
2F1	13.13	13.09	0.00	196.4
3F1	10.47	10.44	0.00	240.1
4F1	11.21	11.18	0.00	301.9
5C1	9.56	9.51	0.00	380.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.600
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00			
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00			
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00			
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00			
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	2F1	-11.58	6.32	-8.91	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-15.00	6.46	-11.54	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.68	-11.51	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.69	6.83	HS 73.75	132.8
HS20	6.15	11.38	HS 122.92	221.3
2F1	9.91	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.8
4F1	7.65	18.26	0.00	206.5
5C1	7.66	12.19	0.00	306.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00	
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00	
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00	
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00	
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00			
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00			
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00			
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00			
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.0	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	2F1	-14.31	4.01	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.06	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.99	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.57	HS 59.26	106.7
HS20	4.94	15.95	HS 98.76	177.8
2F1	7.90	29.82	0.00	118.5
3F1	5.93	27.39	0.00	136.4
4F1	5.80	34.18	0.00	156.7
5C1	6.16	16.27	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00	
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00	
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00	
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00	
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1 3.31 7.21 3.31 7.21 0.00 132.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50		
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00			
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00			
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00			
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00			
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	2F1	-16.97	2.26	-13.06	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.25	-17.78	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.72	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.65	HS 47.27	85.1
HS20	3.94	24.41	HS 78.78	141.8
2F1	6.56	53.82	0.00	98.4
3F1	4.82	37.41	0.00	110.8
4F1	4.70	34.67	0.00	126.8
5C1	5.08	22.95	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1 4.54 6.28 4.54 6.28 0.00 181.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 8.900
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -1.2
 Superimposed Dead Load Moment -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00			
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00			
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00			
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00			
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.64	2.34	5.97	2.63	HS 46.78	84.2
HS20	11.07	3.90	9.95	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

8.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.3	-109.7	123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	2F1	-19.45	2.26	-14.97	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.25	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	3.52	-19.59	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.56	HS 39.26	70.7
HS20	3.27	34.26	HS 65.44	117.8
2F1	5.64	54.57	0.00	84.5
3F1	4.06	37.93	0.00	93.4
4F1	3.92	35.02	0.00	105.7
5C1	4.31	34.94	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.20	2.44	6.20	2.44	HS 48.76	87.8
HS20	10.32	4.06	10.32	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -2.9
 Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	2F1	13.39	R	10.30	242.50	0.0	0.00	0.00	0.00		
		-44.52	L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	19.26	R	14.81	245.00	0.0	0.00	0.00	0.00		
		-70.38	R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	20.82	R	16.01	248.00	0.0	0.00	0.00	0.00		
		-83.21	R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	17.13	R	13.17	284.50	0.0	0.00	0.00	0.00		
		-66.15	R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	2F1	-19.45	21.63	-14.97	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.54	-20.77	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.28	-21.54	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	28.86	-19.59	22.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.000
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment -2.9
 Superimposed Dead Load Moment -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00		0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00		0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00		0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00		0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.7	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	2F1	-21.64	21.63	-16.65	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.54	-23.52	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.28	-24.87	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-28.84	28.86	-22.18	22.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00		212.50	
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00		212.50	
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00		0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00		0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00		0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00		0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	6.57	2.32	5.91	2.61	HS 46.38	83.5
HS20	10.95	3.87	9.84	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.6	66.0
OPER	151.3	-122.7	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	2F1	-2.53	19.43	-1.95	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	26.96	-2.80	20.74	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	27.94	-3.02	21.49	0.00	0.00	0.00	0.00
OPER	5C1	-3.90	25.45	-3.00	19.58	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.18	1.97	HS 39.46	71.0
HS20	30.30	3.29	HS 65.77	118.4
2F1	48.44	5.66	0.00	84.9
3F1	33.68	4.08	0.00	93.9
4F1	31.27	3.94	0.00	106.3
5C1	31.51	4.32	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.13	2.42	6.13	2.42	HS 48.34	87.0
HS20	10.21	4.03	10.21	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1 9.37 5.08 9.37 5.08 0.00 203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 9.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00			
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00			
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.6	67.0
OPER	151.3	-121.1	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	2F1	-2.53	16.94	-1.95	13.03	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	23.05	-2.80	17.73	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	23.67	-3.02	18.20	0.00	0.00	0.00	0.00
OPER	5C1	-5.87	21.87	-4.52	16.82	0.00	0.00	0.00	0.00

Veh.	Rating (-)	Factor (+)	Shear		Load Capacity (tons)
			Rating Value		
HS20	14.38	2.38	HS	47.54	85.6
HS20	23.97	3.96	HS	79.23	142.6
2F1	47.78	6.59		0.00	98.9
3F1	33.22	4.84		0.00	111.4
4F1	30.84	4.72		0.00	127.4
5C1	20.61	5.11		0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.7
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1

4.63

6.21

4.63

6.21

0.00

185.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.76	0.400	top	bott	9.86	8.24	8.24	0.62	1.77
					9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00			
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00			
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00			
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00			
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	3.94	1.63	4.39	HS 32.55	58.6
HS20	3.05	6.57	2.71	7.32	HS 54.25	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	2.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.6	68.0
OPER	151.3	-119.4	113.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	2F1	-4.03	14.27	-3.10	10.98	0.00	0.00	0.00	0.00
OPER	3F1	-4.39	18.99	-3.38	14.61	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	19.42	-3.02	14.94	0.00	0.00	0.00	0.00
OPER	5C1	-8.12	18.31	-6.25	14.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.43	2.98	HS 59.62	107.3
HS20	15.72	4.97	HS 99.36	178.9
2F1	29.58	7.95	0.00	119.2
3F1	27.18	5.97	0.00	137.3
4F1	30.41	5.84	0.00	157.6
5C1	14.70	6.19	0.00	247.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00	
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00	
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00	
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00	
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.1
 Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00			
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00			
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00			
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00			
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS 28.53	51.3
HS20	2.68	8.43	2.38	9.38	HS 47.54	85.6
2F1	3.89	12.93	3.46	14.40	0.00	51.9
3F1	3.04	8.99	2.70	10.01	0.00	62.2
4F1	2.84	8.30	2.52	9.24	0.00	68.0
5C1	3.08	7.44	2.73	8.28	0.00	109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	1.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	2F1	-6.35	11.53	-4.89	8.87	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	14.95	-5.84	11.50	0.00	0.00	0.00	0.00
OPER	4F1	-6.49	14.93	-4.99	11.48	0.00	0.00	0.00	0.00
OPER	5C1	-10.51	14.92	-8.09	11.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.75	3.70	HS 74.08	133.4
HS20	11.24	6.17	HS 123.47	222.3
2F1	18.52	9.98	0.00	149.7
3F1	15.50	7.70	0.00	177.0
4F1	18.12	7.71	0.00	208.2
5C1	11.19	7.71	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	190.00	0.00
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	190.00	0.00
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.2
 Superimposed Dead Load Moment 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	2F1	74.76	L	57.51	202.50	0.0	0.00	0.00	0.00		
		-18.29	R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	R	76.84	222.50	0.0	0.00	0.00	0.00		
		-26.30	R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.34	L	80.26	198.50	0.0	0.00	0.00	0.00		
		-28.43	R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	95.34	L	73.34	161.50	0.0	0.00	0.00	0.00		
		-38.29	R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	5.60	1.45	6.24	HS 28.98	52.2
HS20	2.72	9.34	2.41	10.39	HS 48.31	87.0
2F1	3.82	15.51	3.39	17.26	0.00	50.9
3F1	2.86	10.79	2.54	12.00	0.00	58.4
4F1	2.74	9.98	2.43	11.10	0.00	65.6
5C1	2.99	7.41	2.66	8.24	0.00	106.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.1	-0.4	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	2F1	-8.91	8.83	-6.86	6.80	0.00	0.00	0.00	0.00
OPER	3F1	-11.18	11.07	-8.60	8.52	0.00	0.00	0.00	0.00
OPER	4F1	-10.46	10.32	-8.04	7.94	0.00	0.00	0.00	0.00
OPER	5C1	-12.98	12.17	-9.99	9.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.70	4.81	HS 94.10	169.4
HS20	7.84	8.02	HS 156.83	282.3
2F1	13.01	13.22	0.00	195.2
3F1	10.37	10.55	0.00	238.5
4F1	11.09	11.31	0.00	299.5
5C1	8.93	9.60	0.00	357.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	2F1	74.76 L	57.51	202.50	0.0	0.00	0.00	0.00	
		-18.29 R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 R	76.84	222.50	0.0	0.00	0.00	0.00	
		-26.30 R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 L	80.26	198.50	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 L	73.34	161.50	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.600
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00			
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00			
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00			
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.2
OPER	151.3	-114.2	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	2F1	-11.62	6.29	-8.94	4.84	0.00	0.00	0.00	0.00
OPER	3F1	-15.07	7.48	-11.59	5.75	0.00	0.00	0.00	0.00
OPER	4F1	-15.06	6.33	-11.58	4.87	0.00	0.00	0.00	0.00
OPER	5C1	-15.45	9.64	-11.88	7.41	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.62	7.08	HS 72.45	130.4
HS20	6.04	11.81	HS 120.75	217.4
2F1	9.82	18.86	0.00	147.4
3F1	7.58	15.86	0.00	174.2
4F1	7.58	18.75	0.00	204.7
5C1	7.39	12.31	0.00	295.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00	
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00	
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00			
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00			
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00			
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00			
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.5	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	2F1	-14.36	3.98	-11.04	3.06	0.00	0.00	0.00	0.00
OPER	3F1	-19.12	4.27	-14.71	3.28	0.00	0.00	0.00	0.00
OPER	4F1	-19.55	3.52	-15.04	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-18.72	7.32	-14.40	5.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.93	10.04	HS 58.69	105.6
HS20	4.89	16.74	HS 97.81	176.1
2F1	7.83	30.24	0.00	117.5
3F1	5.88	28.18	0.00	135.3
4F1	5.75	34.18	0.00	155.3
5C1	6.01	16.43	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00			
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00			
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00			
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00			
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.86	0.00	208.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	2F1	-17.02	2.27	-13.09	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.17	3.26	-17.82	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-23.81	3.52	-18.32	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-22.39	5.27	-17.22	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.34	15.69	HS 46.80	84.2
HS20	3.90	26.15	HS 77.99	140.4
2F1	6.51	53.80	0.00	97.6
3F1	4.78	37.40	0.00	109.9
4F1	4.65	34.66	0.00	125.6
5C1	4.95	23.13	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00	
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00	
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00	
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00	
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1

5.56

5.44

5.56

5.44

0.00

217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00		212.50	
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00		212.50	
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00		0.00	0.00
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00		0.00	0.00
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00		0.00	0.00
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00		0.00	0.00
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.94	7.49	2.19	HS 38.82	69.9
HS20	13.85	3.23	12.49	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S04

Check Point I. D.

9.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	2F1	-19.49	2.27	-14.99	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	3.26	-20.81	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	3.53	-21.59	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	3.52	-20.15	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.94	21.33	HS 38.87	70.0
HS20	3.24	35.55	HS 64.78	116.6
2F1	5.60	54.55	0.00	84.0
3F1	4.03	37.92	0.00	92.7
4F1	3.89	35.01	0.00	104.9
5C1	4.16	35.13	0.00	166.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.6
Superimposed Dead Load Moment -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00	
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00	
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00	
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00	
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.77	2.03	7.77	2.03	HS 40.53	73.0
HS20	12.94	3.38	12.94	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000HS20 HS20
2F1
3F1
4F1
5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	2F1	-19.49	22.27	-14.99	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	31.91	-20.81	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	34.28	-21.59	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	30.41	-20.15	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	118.099

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00		
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-8.1	9.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	2F1	-21.66	22.27	-16.66	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-30.61	31.91	-23.54	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-32.38	34.28	-24.91	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-29.69	30.41	-22.84	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00			
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00			
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00			
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00			
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.52	2.60	7.62	2.95	HS 51.97	93.5
HS20	14.20	4.33	12.70	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.84	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear

0.9 0.0 7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.7	74.2
OPER	172.1	-141.1	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	2F1	-0.49	20.47	-0.37	15.74	0.00	0.00	0.00	0.00
OPER	3F1	-0.70	28.87	-0.54	22.21	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	30.41	-0.58	23.39	0.00	0.00	0.00	0.00
OPER	5C1	-1.11	27.42	-0.85	21.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	56.69	2.04	HS 40.77	73.4
HS20	94.49	3.40	HS 67.94	122.3
2F1	290.18	6.04	0.00	90.6
3F1	201.70	4.28	0.00	98.5
4F1	186.92	4.07	0.00	109.8
5C1	126.98	4.51	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00	
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00	
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00	
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.91	2.71	7.91	2.71	HS 54.19	97.5
HS20	13.18	4.52	13.18	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1 10.77 5.39 10.77 5.39 0.00 215.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00			
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00			
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00			
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00			
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.6	75.2
OPER	172.1	-139.4	125.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	2F1	-1.56	18.38	-1.20	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.30	25.44	-1.00	19.57	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	26.13	-0.58	20.10	0.00	0.00	0.00	0.00
OPER	5C1	-2.80	24.15	-2.15	18.58	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.56	2.40	HS 47.91	86.2
HS20	44.27	3.99	HS 79.85	143.7
2F1	89.07	6.82	0.00	102.3
3F1	107.27	4.93	0.00	113.3
4F1	184.64	4.80	0.00	129.6
5C1	49.75	5.19	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	215.00	165.00
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1

5.11

6.72

5.11

6.72

0.00

204.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00			
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00			
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00			
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.6	76.3
OPER	172.1	-137.7	127.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	2F1	-3.16	16.05	-2.43	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.43	21.68	-2.64	16.68	0.00	0.00	0.00	0.00
OPER	4F1	-2.52	22.18	-1.94	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.78	20.67	-3.68	15.90	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.00	2.94	HS 58.80	105.8
HS20	26.67	4.90	HS 98.00	176.4
2F1	43.52	7.92	0.00	118.7
3F1	40.11	5.86	0.00	134.8
4F1	54.68	5.73	0.00	154.7
5C1	28.80	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.72	4.27	1.72	4.27	HS 34.41	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1

3.52

8.03

3.52

8.03

0.00

140.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00		0.00	
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00		0.00	
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00			
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00			
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00			
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00			
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.6	77.3
OPER	172.1	-135.9	128.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	2F1	-5.06	13.52	-3.89	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-6.00	17.64	-4.62	13.57	0.00	0.00	0.00	0.00
OPER	4F1	-5.13	18.09	-3.94	13.92	0.00	0.00	0.00	0.00
OPER	5C1	-6.97	17.52	-5.36	13.48	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.82	HS 76.34	137.4
HS20	18.10	6.36	HS 127.23	229.0
2F1	26.87	9.53	0.00	142.9
3F1	22.64	7.30	0.00	167.9
4F1	26.51	7.12	0.00	192.2
5C1	19.49	7.35	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.2	19.76	0.460		9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00			
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00			
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00			
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00			
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.46	6.06	1.28	6.76	HS 25.52	45.9
HS20	2.42	10.11	2.13	11.26	HS 42.53	76.6
2F1	3.55	15.51	3.11	17.28	0.00	46.7
3F1	2.60	10.78	2.28	12.01	0.00	52.5
4F1	2.45	9.95	2.14	11.09	0.00	57.9
5C1	2.73	11.41	2.39	12.72	0.00	95.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04 HS20 HS20
 Check Point I. D. 10.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.2 0.0 1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-80.5	78.3
OPER	172.1	-134.2	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	2F1	-7.23	10.81	-5.56	8.32	0.00	0.00	0.00	0.00
OPER	3F1	-9.00	14.12	-6.92	10.86	0.00	0.00	0.00	0.00
OPER	4F1	-8.23	14.21	-6.33	10.93	0.00	0.00	0.00	0.00
OPER	5C1	-9.33	14.97	-7.18	11.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.46	4.67	HS 93.42	168.2
HS20	12.43	7.78	HS 155.70	280.3
2F1	18.56	12.07	0.00	181.1
3F1	14.92	9.24	0.00	212.6
4F1	16.30	9.19	0.00	248.1
5C1	14.39	8.72	0.00	348.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00			
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00			
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00			
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00			
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	2F1	-9.63	7.97	-7.41	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-12.38	10.92	-9.53	8.40	0.00	0.00	0.00	0.00
OPER	4F1	-12.28	10.15	-9.44	7.81	0.00	0.00	0.00	0.00
OPER	5C1	-12.15	12.27	-9.35	9.44	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.55	6.22	HS 110.98	199.8
HS20	9.25	10.38	HS 184.96	332.9
2F1	13.74	16.60	0.00	206.1
3F1	10.69	12.12	0.00	245.9
4F1	10.78	13.05	0.00	291.1
5C1	10.89	10.79	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00			
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00			
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00			
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00			
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.6	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	2F1	-12.23	6.07	-9.41	4.67	0.00	0.00	0.00	0.00
OPER	3F1	-16.11	7.59	-12.39	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.89	6.25	-12.22	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.60	9.40	-12.00	7.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.12	8.29	HS 82.32	148.2
HS20	6.86	13.82	HS 137.20	247.0
2F1	10.69	22.11	0.00	160.3
3F1	8.11	17.66	0.00	186.5
4F1	8.22	21.45	0.00	222.0
5C1	8.38	14.27	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.800
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 2.8
 Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00			
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00			
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00			
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00			
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.65	14.88	1.45	16.62	HS 29.08	52.3
HS20	2.76	24.80	2.42	27.69	HS 48.47	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.4	81.5
OPER	172.1	-128.9	135.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	2F1	-14.98	4.08	-11.52	3.14	0.00	0.00	0.00	0.00
OPER	3F1	-20.12	4.17	-15.48	3.21	0.00	0.00	0.00	0.00
OPER	4F1	-20.19	3.43	-15.53	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-19.51	6.32	-15.01	4.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.19	12.47	HS 63.86	114.9
HS20	5.32	20.78	HS 106.43	191.6
2F1	8.61	33.25	0.00	129.1
3F1	6.41	32.57	0.00	147.3
4F1	6.39	39.55	0.00	172.4
5C1	6.61	21.49	0.00	264.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00	
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00	
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00	
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00	
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 10.900
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00			
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00			
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00			
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00			
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.24	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-4.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.5
OPER	172.1	-127.2	137.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	2F1	-17.86	2.05	-13.74	1.58	0.00	0.00	0.00	0.00
OPER	3F1	-24.36	2.61	-18.74	2.01	0.00	0.00	0.00	0.00
OPER	4F1	-24.90	2.82	-19.16	2.17	0.00	0.00	0.00	0.00
OPER	5C1	-23.66	4.11	-18.20	3.16	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.56	23.44	HS 51.25	92.3
HS20	4.27	39.06	HS 85.42	153.8
2F1	7.12	66.95	0.00	106.9
3F1	5.22	52.68	0.00	120.1
4F1	5.11	48.82	0.00	137.9
5C1	5.38	33.50	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00	
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00	
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00	
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00	
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1

5.36

56.32

5.36

56.32

0.00

214.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S04	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.7	-6.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-75.3	79.9
OPER	172.1	-125.5	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	2F1	-20.82	0.00	-16.01	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.77	0.00	-22.13	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.87	0.00	-22.97	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.99	0.00	-21.53	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.11	30.37	HS 42.26	76.1
HS20	3.52	50.62	HS 70.43	126.8
2F1	6.03	999.00	0.00	90.4
3F1	4.36	999.00	0.00	100.3
4F1	4.20	999.00	0.00	113.4
5C1	4.48	999.00	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D. S05 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	11.500	1	0		0.0	0.0
1	2	2.000	2	0		0.0	0.0
1	3	11.500	1	0		0.0	0.0
2	1	11.500	3	0		0.0	0.0
2	2	2.000	4	0		0.0	0.0
2	3	11.500	3	0		0.0	0.0
3	1	25.000	3	0		0.0	0.0
4	1	11.500	3	0		0.0	0.0
4	2	2.000	4	0		0.0	0.0
4	3	11.500	3	0		0.0	0.0
5	1	11.500	3	0		0.0	0.0
5	2	2.000	4	0		0.0	0.0
5	3	11.500	3	0		0.0	0.0
6	1	11.500	3	0		0.0	0.0
6	2	2.000	4	0		0.0	0.0
6	3	11.500	3	0		0.0	0.0
7	1	11.500	3	0		0.0	0.0
7	2	2.000	4	0		0.0	0.0
7	3	11.500	3	0		0.0	0.0
8	1	25.000	3	0		0.0	0.0
9	1	11.500	3	0		0.0	0.0
9	2	2.000	4	0		0.0	0.0
9	3	11.500	3	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	765.0	765.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1

2	W	0.000	765.0	765.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	765.0	765.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	765.0	765.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	765.0	765.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	765.0	765.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	765.0	765.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	765.0	765.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1
9	W	0.000	765.0	765.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	765.0	765.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	215.6	-188.8	188.8	-215.6
OPER	359.4C	-314.7	314.7	-359.4C	359.4	-314.7	314.7	-359.4

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-84.3	74.3
OPER	171.7	-140.4	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.40	32.01	-1.85	24.62	-2.37	24.72	-1.82	19.01
OPER	HS20	-2.40	32.01	-1.85	24.62	-2.37	24.72	-1.82	19.01
OPER	2F1	-1.63	18.70	-1.26	14.39	0.00	0.00	0.00	0.00
OPER	3F1	-2.35	25.85	-1.81	19.88	0.00	0.00	0.00	0.00
OPER	4F1	-2.54	26.83	-1.95	20.64	0.00	0.00	0.00	0.00
OPER	5C1	-2.07	25.15	-1.59	19.35	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	35.09	2.32	HS 46.40	83.5
HS20	58.48	3.87	HS 77.33	139.2
2F1	85.95	6.62	0.00	99.3
3F1	59.74	4.79	0.00	110.1
4F1	55.33	4.61	0.00	124.5
5C1	67.91	4.92	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 196.4	196.4	-196.4	196.4	-196.4	196.4	-196.4	196.4	-
OPER 327.3	327.3	-327.3	327.3	-327.3	327.3	-327.3	327.3	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	16.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	204.7	-199.8	177.9	-226.6
OPER	359.4C	-314.7	314.7	-359.4C	341.2	-332.9	296.5	-377.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50			
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00		
OPER	HS20	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50			
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00		
OPER	2F1	40.10 R	30.85	12.50	0.0	0.00	0.00	0.00	0.00		
		-4.08 R	-3.14	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	54.71 R	42.09	16.50	0.0	0.00	0.00	0.00	0.00		
		-5.88 R	-4.52	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	55.92 R	43.02	20.50	0.0	0.00	0.00	0.00	0.00		
		-6.37 R	-4.90	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	53.14 R	40.88	18.50	0.0	0.00	0.00	0.00	0.00		
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	31.88	2.66	36.17	HS 53.19	95.7
HS20	5.10	53.14	4.43	60.28	HS 88.64	159.6
2F1	8.51	81.50	7.39	92.45	0.00	110.9
3F1	6.24	56.64	5.42	64.25	0.00	124.6
4F1	6.10	52.27	5.30	59.29	0.00	143.1
5C1	6.42	59.96	5.58	68.01	0.00	223.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.7

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	103.0	-83.0 75.5
OPER	171.7	-138.4 125.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)
INV.	HS20	-2.96 26.75	-2.27 20.58	-3.17 21.20	-2.44 16.31				
OPER	HS20	-2.96 26.75	-2.27 20.58	-3.17 21.20	-2.44 16.31				
OPER	2F1	-1.85 16.04	-1.42 12.34	0.00 0.00	0.00 0.00				
OPER	3F1	-2.35 21.89	-1.81 16.83	0.00 0.00	0.00 0.00				
OPER	4F1	-2.54 22.37	-1.95 17.21	0.00 0.00	0.00 0.00				
OPER	5C1	-3.70 21.26	-2.84 16.35	0.00 0.00	0.00 0.00				

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	26.21	2.82	HS 56.45	101.6
HS20	43.68	4.70	HS 94.08	169.3
2F1	74.89	7.85	0.00	117.7
3F1	58.85	5.75	0.00	132.3
4F1	54.51	5.63	0.00	151.9
5C1	37.41	5.92	0.00	236.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 207.3	203.7	-189.1	203.7	-189.1	185.4	-207.3	185.4	-
OPER 345.5	327.3	-327.3	327.3	-327.3	309.0	-345.5	309.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50	
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00
OPER	HS20	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50	
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00
OPER	2F1	40.10 R	30.85	12.50	0.0	0.00	0.00	0.00	0.00
		-4.08 R	-3.14	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.71 R	42.09	16.50	0.0	0.00	0.00	0.00	0.00
		-5.88 R	-4.52	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.92 R	43.02	20.50	0.0	0.00	0.00	0.00	0.00
		-6.37 R	-4.90	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.14 R	40.88	18.50	0.0	0.00	0.00	0.00	0.00
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.77	33.09	2.77	33.09	HS 55.44	99.8
HS20	4.62	55.15	4.62	55.15	HS 92.41	166.3
2F1	7.71	84.58	7.71	84.58	0.00	115.6
3F1	5.65	58.78	5.65	58.78	0.00	129.9
4F1	5.53	54.25	5.53	54.25	0.00	149.2

5C1	5.82	62.22	5.82	62.22	0.00	232.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	196.9	-207.6	170.1	-234.4
OPER	359.4C	-314.7	314.7	-359.4C	328.2	-345.9	283.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00			
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00		
OPER	HS20	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00			
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00		
OPER	2F1	67.28 R	51.76	15.00	0.0	0.00	0.00	0.00			
		-8.17 R	-6.28	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.38 R	69.52	19.00	0.0	0.00	0.00	0.00			
		-11.76 R	-9.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.67 R	69.75	23.00	0.0	0.00	0.00	0.00			
		-12.74 R	-9.80	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	87.63 R	67.41	21.00	0.0	0.00	0.00	0.00			
		-11.11 R	-8.54	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	16.57	1.56	18.71	HS 31.26	56.3
HS20	3.02	27.61	2.61	31.18	HS 52.10	93.8
2F1	4.88	42.34	4.21	47.81	0.00	63.2
3F1	3.63	29.43	3.14	33.23	0.00	72.1
4F1	3.62	27.16	3.13	30.67	0.00	84.4
5C1	3.74	31.15	3.23	35.17	0.00	129.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-81.8	76.8
OPER	171.7	-136.3	128.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.88	21.76	-4.52	16.74	-5.76	17.86	-4.43	13.74
OPER	HS20	-5.88	21.76	-4.52	16.74	-5.76	17.86	-4.43	13.74
OPER	2F1	-3.67	13.46	-2.83	10.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.75	18.08	-2.88	13.90	0.00	0.00	0.00	0.00
OPER	4F1	-3.09	18.13	-2.38	13.95	0.00	0.00	0.00	0.00
OPER	5C1	-5.69	17.53	-4.38	13.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	13.91	3.53	HS 70.55	127.0
HS20	23.19	5.88	HS 117.59	211.7
2F1	37.10	9.51	0.00	142.6
3F1	36.33	7.08	0.00	162.8
4F1	44.12	7.06	0.00	190.5
5C1	23.95	7.30	0.00	292.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 215.1	208.9	-183.9	208.9	-183.9	177.6	-215.1	177.6	-
OPER 358.5	327.3	-327.3	327.3	-327.3	296.0	-358.5	296.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00	
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00
OPER	HS20	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00	
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00
OPER	2F1	67.28 R	51.76	15.00	0.0	0.00	0.00	0.00	
		-8.17 R	-6.28	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.38 R	69.52	19.00	0.0	0.00	0.00	0.00	
		-11.76 R	-9.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.67 R	69.75	23.00	0.0	0.00	0.00	0.00	
		-12.74 R	-9.80	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.63 R	67.41	21.00	0.0	0.00	0.00	0.00	
		-11.11 R	-8.54	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	17.17	1.63	17.17	HS 32.65	58.8
HS20	2.72	28.61	2.72	28.61	HS 54.41	97.9
2F1	4.40	43.88	4.40	43.88	0.00	66.0
3F1	3.28	30.50	3.28	30.50	0.00	75.3
4F1	3.27	28.15	3.27	28.15	0.00	88.2

5C1	3.38	32.28	3.38	32.28	0.00	135.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 1.300 2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	192.2	-212.2	165.4	-239.0
OPER	359.4C	-314.7	314.7	-359.4C	320.4	-353.7	275.7	-398.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50			
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00		
OPER	HS20	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50			
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00		
OPER	2F1	82.36 R	63.36	17.50	0.0	0.00	0.00	0.00			
		-12.25 R	-9.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	108.52 R	83.47	21.50	0.0	0.00	0.00	0.00			
		-17.63 R	-13.56	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.26 R	87.12	21.50	0.0	0.00	0.00	0.00			
		-19.11 R	-14.70	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	105.06 R	80.81	23.50	0.0	0.00	0.00	0.00			
		-16.66 R	-12.81	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	11.29	1.29	12.72	HS 25.79	46.4
HS20	2.50	18.82	2.15	21.20	HS 42.98	77.4
2F1	3.89	28.86	3.35	32.51	0.00	50.2
3F1	2.95	20.06	2.54	22.59	0.00	58.4
4F1	2.83	18.51	2.43	20.85	0.00	65.7
5C1	3.05	21.23	2.62	23.92	0.00	105.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.0	-80.5	78.0
OPER	171.7	-134.2	130.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.73	17.11	-6.71	13.16	-8.44	14.72	-6.50	11.32
OPER	HS20	-8.73	17.11	-6.71	13.16	-8.44	14.72	-6.50	11.32
OPER	2F1	-5.45	10.98	-4.20	8.45	0.00	0.00	0.00	0.00
OPER	3F1	-6.83	14.47	-5.25	11.13	0.00	0.00	0.00	0.00
OPER	4F1	-5.62	14.26	-4.33	10.97	0.00	0.00	0.00	0.00
OPER	5C1	-8.45	14.01	-6.50	10.78	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.22	4.56	HS 91.23	164.2
HS20	15.37	7.60	HS 152.05	273.7
2F1	24.59	11.84	0.00	177.6
3F1	19.65	8.99	0.00	206.7
4F1	23.86	9.12	0.00	246.1
5C1	15.87	9.28	0.00	371.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 219.8	212.0	-180.8	212.0	-180.8	173.0	-219.8	173.0	-
OPER 366.3	327.3	-327.3	327.3	-327.3	288.3	-366.3	288.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50	
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00
OPER	HS20	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50	
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00
OPER	2F1	82.36 R	63.36	17.50	0.0	0.00	0.00	0.00	
		-12.25 R	-9.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.52 R	83.47	21.50	0.0	0.00	0.00	0.00	
		-17.63 R	-13.56	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.26 R	87.12	21.50	0.0	0.00	0.00	0.00	
		-19.11 R	-14.70	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.06 R	80.81	23.50	0.0	0.00	0.00	0.00	
		-16.66 R	-12.81	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.35	11.69	1.35	11.69	HS 26.96	48.5
HS20	2.25	19.49	2.25	19.49	HS 44.94	80.9
2F1	3.50	29.89	3.50	29.89	0.00	52.5
3F1	2.66	20.77	2.66	20.77	0.00	61.1
4F1	2.55	19.17	2.55	19.17	0.00	68.7

5C1	2.74	21.99	2.74	21.99	0.00	109.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 1.400 2F1
3F1
4F1
5C1

Dead Load Moment 3.6
Superimposed Dead Load Moment 37.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	190.7	-213.7	163.9	-240.6
OPER	359.4C	-314.7	314.7	-359.4C	317.9	-356.2	273.2	-400.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00			
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00		
OPER	HS20	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00			
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00		
OPER	2F1	86.49 R	66.53	20.00	0.0	0.00	0.00	0.00			
		-16.34 R	-12.57	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.38 R	88.75	20.00	0.0	0.00	0.00	0.00			
		-23.51 R	-18.09	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	123.63 R	95.10	24.00	0.0	0.00	0.00	0.00			
		-25.48 R	-19.60	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	110.30 R	84.84	22.00	0.0	0.00	0.00	0.00			
		-22.21 R	-17.09	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.48	8.53	1.27	9.60	HS 25.50	45.9
HS20	2.47	14.22	2.12	16.00	HS 42.51	76.5
2F1	3.67	21.80	3.16	24.54	0.00	47.4
3F1	2.76	15.15	2.37	17.05	0.00	54.5
4F1	2.57	13.98	2.21	15.74	0.00	59.7
5C1	2.88	16.04	2.48	18.05	0.00	99.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-79.2	79.3
OPER	171.7	-132.1	132.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-11.47	12.85	-8.83	9.89	-11.18	11.80	-8.60	9.08
OPER	HS20	-11.47	12.85	-8.83	9.89	-11.18	11.80	-8.60	9.08
OPER	2F1	-7.17	8.65	-5.52	6.65	0.00	0.00	0.00	0.00
OPER	3F1	-9.82	11.12	-7.56	8.55	0.00	0.00	0.00	0.00
OPER	4F1	-9.12	10.59	-7.02	8.15	0.00	0.00	0.00	0.00
OPER	5C1	-11.04	10.91	-8.49	8.39	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.91	6.17	HS 123.37	222.1
HS20	11.51	10.28	HS 205.62	370.1
2F1	18.42	15.28	0.00	229.2
3F1	13.44	11.89	0.00	273.4
4F1	14.47	12.47	0.00	336.8
5C1	11.96	12.11	0.00	478.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.6
Superimposed Dead Load Moment 37.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 221.3	213.0	-179.8	213.0	-179.8	171.4	-221.3	171.4	-
OPER 368.8	327.3	-327.3	327.3	-327.3	285.7	-368.8	285.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00	
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00
OPER	HS20	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00	
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00
OPER	2F1	86.49 R	66.53	20.00	0.0	0.00	0.00	0.00	
		-16.34 R	-12.57	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.38 R	88.75	20.00	0.0	0.00	0.00	0.00	
		-23.51 R	-18.09	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	123.63 R	95.10	24.00	0.0	0.00	0.00	0.00	
		-25.48 R	-19.60	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	110.30 R	84.84	22.00	0.0	0.00	0.00	0.00	
		-22.21 R	-17.09	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	8.83	1.33	8.83	HS 26.68	48.0
HS20	2.22	14.72	2.22	14.72	HS 44.47	80.0
2F1	3.30	22.57	3.30	22.57	0.00	49.6
3F1	2.48	15.69	2.48	15.69	0.00	57.0
4F1	2.31	14.48	2.31	14.48	0.00	62.4

5C1	2.59	16.60	2.59	16.60	0.00	103.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.34	8.30	8.30	0.74
21.2	19.72	0.460	bott	10.38	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
20.20	20.20	10.08	11.12	1462.8	1462.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
145.2	131.5	145.2	131.5	485.29

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	20.52
bott	4.15	0.74	11.220	150.00	80.23		22.82

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	105.568

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	485.29	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	224.0C	-184.3	166.9	-224.0C	200.7	-207.6	143.6	-247.3
OPER	373.3C	-307.1	278.2	-373.3C	334.5	-346.0	239.3	-412.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50			
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00		
OPER	HS20	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50			
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00		
OPER	2F1	82.75 L	63.66	2.50	0.0	0.00	0.00	0.00			
		-20.42 R	-15.71	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	112.94 R	86.88	22.50	0.0	0.00	0.00	0.00			
		-29.39 R	-22.61	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	120.14 L	92.42	-1.50	0.0	0.00	0.00	0.00			
		-31.84 R	-24.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	107.76 R	82.90	24.50	0.0	0.00	0.00	0.00			
		-27.76 R	-21.36	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.66	6.63	1.18	7.89	HS 23.70	42.7
HS20	2.76	11.04	1.98	13.16	HS 39.50	71.1
2F1	4.04	16.94	2.89	20.18	0.00	43.4
3F1	2.96	11.77	2.12	14.02	0.00	48.7
4F1	2.78	10.86	1.99	12.94	0.00	53.8
5C1	3.10	12.46	2.22	14.84	0.00	88.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	1.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-78.0	80.5
OPER	171.7	-130.0	134.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.08	9.69	-11.60	7.46	-13.94	9.14	-10.72	7.03
OPER	HS20	-15.08	9.69	-11.60	7.46	-13.94	9.14	-10.72	7.03
OPER	2F1	-9.72	6.49	-7.48	4.99	0.00	0.00	0.00	0.00
OPER	3F1	-12.70	8.08	-9.77	6.21	0.00	0.00	0.00	0.00
OPER	4F1	-12.78	7.39	-9.83	5.68	0.00	0.00	0.00	0.00
OPER	5C1	-13.47	8.37	-10.36	6.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.17	8.31	HS 103.44	186.2
HS20	8.62	13.85	HS 172.40	310.3
2F1	13.37	20.68	0.00	200.5
3F1	10.23	16.62	0.00	235.4
4F1	10.17	18.17	0.00	274.7
5C1	9.65	16.03	0.00	386.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 196.9	207.2	-176.1	189.1	-158.0	168.3	-214.9	150.3	-
OPER 328.1	319.4	-319.4	289.3	-289.3	280.6	-358.2	250.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50	
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00
OPER	HS20	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50	
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00
OPER	2F1	82.75 L	63.66	2.50	0.0	0.00	0.00	0.00	
		-20.42 R	-15.71	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	112.94 R	86.88	22.50	0.0	0.00	0.00	0.00	
		-29.39 R	-22.61	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	120.14 L	92.42	-1.50	0.0	0.00	0.00	0.00	
		-31.84 R	-24.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	107.76 R	82.90	24.50	0.0	0.00	0.00	0.00	
		-27.76 R	-21.36	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.39	6.86	1.24	6.28	HS 24.80	44.6
HS20	2.32	11.44	2.07	10.48	HS 41.34	74.4
2F1	3.39	17.54	3.03	16.07	0.00	45.4
3F1	2.48	12.19	2.22	11.16	0.00	51.0
4F1	2.34	11.25	2.09	10.30	0.00	56.3

5C1	2.60	12.90	2.32	11.82	0.00	93.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	197.2	-207.3	170.4	-234.1
OPER	359.4C	-314.7	314.7	-359.4C	328.6	-345.4	283.9	-390.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00			
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00		
OPER	HS20	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00			
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00		
OPER	2F1	77.72 L	59.79	5.00	0.0	0.00	0.00	0.00			
		-24.51 R	-18.85	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.22 L	77.10	5.00	0.0	0.00	0.00	0.00			
		-35.27 R	-27.13	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.58 L	82.76	1.00	0.0	0.00	0.00	0.00			
		-38.21 R	-29.39	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.53 L	75.79	3.00	0.0	0.00	0.00	0.00			
		-33.32 R	-25.63	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	5.51	1.48	6.23	HS 29.62	53.3
HS20	2.86	9.19	2.47	10.38	HS 49.37	88.9
2F1	4.23	14.09	3.65	15.92	0.00	54.8
3F1	3.28	9.80	2.83	11.06	0.00	65.2
4F1	3.06	9.04	2.64	10.21	0.00	71.3
5C1	3.34	10.37	2.88	11.71	0.00	115.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

1.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.4 -3.9 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-76.7	81.8
OPER	171.7	-127.8	136.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.20	6.08	-14.00	4.68	-16.68	6.74	-12.83	5.19
OPER	HS20	-18.20	6.08	-14.00	4.68	-16.68	6.74	-12.83	5.19
OPER	2F1	-12.15	4.54	-9.35	3.49	0.00	0.00	0.00	0.00
OPER	3F1	-15.86	5.39	-12.20	4.15	0.00	0.00	0.00	0.00
OPER	4F1	-16.27	4.60	-12.51	3.54	0.00	0.00	0.00	0.00
OPER	5C1	-15.76	6.26	-12.12	4.82	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.21	12.14	HS 84.26	151.7
HS20	7.02	20.23	HS 140.44	252.8
2F1	10.52	30.03	0.00	157.8
3F1	8.06	25.31	0.00	185.3
4F1	7.86	29.64	0.00	212.2
5C1	8.11	21.78	0.00	324.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	208.7	-184.1	208.7	-184.1	177.9	-214.8	177.9	-
OPER 358.0	327.3	-327.3	327.3	-327.3	296.5	-358.0	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00	
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00
OPER	HS20	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00	
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00
OPER	2F1	77.72 L	59.79	5.00	0.0	0.00	0.00	0.00	
		-24.51 R	-18.85	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.22 L	77.10	5.00	0.0	0.00	0.00	0.00	
		-35.27 R	-27.13	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.58 L	82.76	1.00	0.0	0.00	0.00	0.00	
		-38.21 R	-29.39	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.53 L	75.79	3.00	0.0	0.00	0.00	0.00	
		-33.32 R	-25.63	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	5.72	1.55	5.72	HS 30.93	55.7
HS20	2.58	9.52	2.58	9.52	HS 51.55	92.8
2F1	3.82	14.61	3.82	14.61	0.00	57.2
3F1	2.96	10.15	2.96	10.15	0.00	68.0
4F1	2.76	9.37	2.76	9.37	0.00	74.4

5C1

3.01

10.75

3.01

10.75

0.00

120.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 1.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	205.2	-199.3	178.4	-226.1
OPER	359.4C	-314.7	314.7	-359.4C	342.0	-332.1	297.3	-376.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50			
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00		
OPER	HS20	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50			
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00		
OPER	2F1	63.22 L	48.63	7.50	0.0	0.00	0.00	0.00			
		-28.59 R	-22.00	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.65 L	62.81	3.50	0.0	0.00	0.00	0.00			
		-41.14 R	-31.65	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.73 L	64.41	3.50	0.0	0.00	0.00	0.00			
		-44.58 R	-34.29	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.94 R	62.26	64.50	0.0	0.00	0.00	0.00			
		-38.87 R	-29.90	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.06	4.54	1.79	5.16	HS 35.89	64.6
HS20	3.44	7.57	2.99	8.59	HS 59.81	107.7
2F1	5.41	11.61	4.70	13.18	0.00	70.5
3F1	4.19	8.07	3.64	9.16	0.00	83.7
4F1	4.08	7.45	3.55	8.45	0.00	95.8
5C1	4.22	8.55	3.67	9.69	0.00	146.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

1.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-75.4	83.1
OPER	171.7	-125.7	138.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.31	3.01	-17.93	2.32	-19.36	4.63	-14.89	3.56
OPER	HS20	-23.31	3.01	-17.93	2.32	-19.36	4.63	-14.89	3.56
OPER	2F1	-14.43	2.84	-11.10	2.18	0.00	0.00	0.00	0.00
OPER	3F1	-19.49	3.08	-14.99	2.37	0.00	0.00	0.00	0.00
OPER	4F1	-19.94	2.26	-15.34	1.74	0.00	0.00	0.00	0.00
OPER	5C1	-18.58	4.29	-14.30	3.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.24	17.93	HS 64.72	116.5
HS20	5.39	29.88	HS 107.86	194.1
2F1	8.71	48.77	0.00	130.7
3F1	6.45	44.97	0.00	148.4
4F1	6.31	61.36	0.00	170.3
5C1	6.77	32.26	0.00	270.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 206.8	203.3	-189.4	203.3	-189.4	185.9	-206.8	185.9	-
OPER 344.7	327.3	-327.3	327.3	-327.3	309.8	-344.7	309.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50	
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00
OPER	HS20	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50	
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00
OPER	2F1	63.22 L	48.63	7.50	0.0	0.00	0.00	0.00	
		-28.59 R	-22.00	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.65 L	62.81	3.50	0.0	0.00	0.00	0.00	
		-41.14 R	-31.65	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.73 L	64.41	3.50	0.0	0.00	0.00	0.00	
		-44.58 R	-34.29	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.94 R	62.26	64.50	0.0	0.00	0.00	0.00	
		-38.87 R	-29.90	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.72	1.87	4.72	HS 37.41	67.3
HS20	3.12	7.86	3.12	7.86	HS 62.34	112.2
2F1	4.90	12.06	4.90	12.06	0.00	73.5
3F1	3.80	8.38	3.80	8.38	0.00	87.3
4F1	3.70	7.73	3.70	7.73	0.00	99.9

5C1 3.83 8.87 3.83 8.87 0.00 153.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	216.3	-188.1	189.5	-215.0
OPER	359.4C	-314.7	314.7	-359.4C	360.5	-313.6	315.8	-358.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00			
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00	85.00		
OPER	HS20	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00			
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00	85.00		
OPER	2F1	41.03 L	31.56	10.00	0.0	0.00	0.00	0.00			
		-32.68 R	-25.14	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	50.80 L	39.08	6.00	0.0	0.00	0.00	0.00			
		-47.02 R	-36.17	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.39 L	36.45	2.00	0.0	0.00	0.00	0.00			
		-50.95 R	-39.19	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.49 R	44.99	67.00	0.0	0.00	0.00	0.00			
		-44.42 R	-34.17	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.39	3.75	2.97	4.29	HS 59.38	106.9
HS20	5.65	6.26	4.95	7.15	HS 98.97	178.1
2F1	8.79	9.60	7.70	10.96	0.00	115.5
3F1	7.10	6.67	6.22	7.62	0.00	143.0
4F1	7.61	6.16	6.66	7.03	0.00	166.2
5C1	6.16	7.06	5.40	8.06	0.00	216.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

1.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-74.2	84.3
OPER	171.7	-123.6	140.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.22	0.97	-21.71	0.74	-21.95	2.83	-16.88	2.17
OPER	HS20	-28.22	0.97	-21.71	0.74	-21.95	2.83	-16.88	2.17
OPER	2F1	-16.52	1.40	-12.71	1.08	0.00	0.00	0.00	0.00
OPER	3F1	-22.87	1.16	-17.59	0.90	0.00	0.00	0.00	0.00
OPER	4F1	-23.49	0.68	-18.07	0.52	0.00	0.00	0.00	0.00
OPER	5C1	-21.71	2.52	-16.70	1.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.63	29.83	HS 52.57	94.6
HS20	4.38	49.72	HS 87.61	157.7
2F1	7.48	100.11	0.00	112.2
3F1	5.41	120.75	0.00	124.3
4F1	5.26	206.64	0.00	142.1
5C1	5.70	55.84	0.00	227.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 195.7	195.9	-196.8	195.9	-196.8	197.0	-195.7	197.0	-
OPER 326.2	327.3	-327.3	327.3	-327.3	328.4	-326.2	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00	
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00	85.00
OPER	HS20	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00	
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00	85.00
OPER	2F1	41.03 L	31.56	10.00	0.0	0.00	0.00	0.00	
		-32.68 R	-25.14	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	50.80 L	39.08	6.00	0.0	0.00	0.00	0.00	
		-47.02 R	-36.17	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.39 L	36.45	2.00	0.0	0.00	0.00	0.00	
		-50.95 R	-39.19	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.49 R	44.99	67.00	0.0	0.00	0.00	0.00	
		-44.42 R	-34.17	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.09	3.90	3.09	3.90	HS 61.75	111.1
HS20	5.15	6.51	5.15	6.51	HS 102.91	185.2
2F1	8.00	9.98	8.00	9.98	0.00	120.1
3F1	6.46	6.94	6.46	6.94	0.00	148.7
4F1	6.93	6.40	6.93	6.40	0.00	172.8

5C1

5.61

7.34

5.61

7.34

0.00

224.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.9
Superimposed Dead Load Moment -23.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	230.6	-173.9	203.8	-200.7
OPER	359.4C	-314.7	314.7	-359.4C	384.3	-289.8	339.6	-334.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50			
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00		
OPER	HS20	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50			
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00		
OPER	2F1	13.28 L	10.21	12.50	0.0	0.00	0.00	0.00			
		-36.76 R	-28.28	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.18 R	10.91	70.00	0.0	0.00	0.00	0.00			
		-52.90 R	-40.69	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.14 R	11.65	74.00	0.0	0.00	0.00	0.00			
		-57.32 R	-44.09	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.39 R	22.61	69.50	0.0	0.00	0.00	0.00			
		-52.24 L	-40.18	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.77	2.80	8.63	3.23	HS 55.94	100.7
HS20	16.27	4.66	14.38	5.38	HS 93.24	167.8
2F1	28.94	7.88	25.57	9.10	0.00	118.2
3F1	27.09	5.48	23.94	6.32	0.00	126.0
4F1	25.38	5.06	22.42	5.84	0.00	136.5
5C1	13.08	5.55	11.55	6.40	0.00	221.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

1.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.9	-9.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	103.0	-72.9	85.6	
OPER	171.7	-121.5	142.7	

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.72	0.64	-25.17	0.50	-24.40	1.34	-18.77	1.03
OPER	HS20	-32.72	0.64	-25.17	0.50	-24.40	1.34	-18.77	1.03
OPER	2F1	-18.40	0.44	-14.15	0.34	0.00	0.00	0.00	0.00
OPER	3F1	-25.95	0.63	-19.96	0.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.33	0.68	-21.02	0.52	0.00	0.00	0.00	0.00
OPER	5C1	-24.64	1.00	-18.96	0.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.23	63.79	HS 44.58	80.2
HS20	3.71	106.32	HS 74.30	133.7
2F1	6.61	325.57	0.00	99.1
3F1	4.68	226.30	0.00	107.7
4F1	4.45	209.72	0.00	120.1
5C1	4.93	142.70	0.00	197.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.9
Superimposed Dead Load Moment -23.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.4	186.4	-206.3	186.4	-206.3	211.3	-181.4	211.3	-
OPER 302.4	327.3	-327.3	327.3	-327.3	352.2	-302.4	352.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50	
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00
OPER	HS20	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50	
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00
OPER	2F1	13.28 L	10.21	12.50	0.0	0.00	0.00	0.00	
		-36.76 R	-28.28	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.18 R	10.91	70.00	0.0	0.00	0.00	0.00	
		-52.90 R	-40.69	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.14 R	11.65	74.00	0.0	0.00	0.00	0.00	
		-57.32 R	-44.09	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.39 R	22.61	69.50	0.0	0.00	0.00	0.00	
		-52.24 L	-40.18	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.95	2.92	8.95	2.92	HS 58.37	105.1
HS20	14.91	4.86	14.91	4.86	HS 97.29	175.1
2F1	26.52	8.23	26.52	8.23	0.00	123.4
3F1	24.83	5.72	24.83	5.72	0.00	131.5
4F1	23.26	5.28	23.26	5.28	0.00	142.4

5C1	11.98	5.79	11.98	5.79	0.00	231.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	213.1	-126.1	190.8	-148.4
OPER	301.2C	-264.1	264.1	-301.2C	355.1	-210.2	318.0	-247.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00		
OPER	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00		
OPER	2F1	10.96 R	8.43	67.50	0.0	0.00	0.00	0.00			
		-45.02 L	-34.63	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.76 R	12.12	70.00	0.0	0.00	0.00	0.00			
		-67.36 R	-51.82	29.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	17.07 R	13.13	73.00	0.0	0.00	0.00	0.00			
		-81.24 R	-62.50	30.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00			
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.68	1.21	11.35	1.42	HS 24.21	43.6
HS20	21.13	2.02	18.92	2.37	HS 40.36	72.6
2F1	32.42	4.67	29.03	5.49	0.00	70.0
3F1	22.53	3.12	20.18	3.67	0.00	71.8
4F1	20.80	2.59	18.63	3.04	0.00	69.8
5C1	27.22	2.84	24.37	3.35	0.00	113.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-9.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-71.7	63.3
OPER	151.4	-119.5	105.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.72	34.96	-25.17	26.89	-24.40	26.43	-18.77	20.33
OPER	HS20	-32.72	34.96	-25.17	26.89	-24.40	26.43	-18.77	20.33
OPER	2F1	-18.40	19.64	-14.15	15.11	0.00	0.00	0.00	0.00
OPER	3F1	-25.95	27.65	-19.96	21.27	0.00	0.00	0.00	0.00
OPER	4F1	-27.33	29.21	-21.02	22.47	0.00	0.00	0.00	0.00
OPER	5C1	-24.64	26.82	-18.96	20.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	1.81	HS 36.22	65.2
HS20	3.25	3.02	HS 60.37	108.7
2F1	5.97	5.37	0.00	80.6
3F1	4.16	3.82	0.00	87.8
4F1	3.88	3.61	0.00	97.5
5C1	4.37	3.93	0.00	157.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.4	143.2	-186.3	143.2	-186.3	197.1	-132.4	197.1	-
OPER 220.7	274.6	-274.6	274.6	-274.6	328.5	-220.7	328.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	2F1	10.96 R	8.43	67.50	0.0	0.00	0.00	0.00	
		-45.02 L	-34.63	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.76 R	12.12	70.00	0.0	0.00	0.00	0.00	
		-67.36 R	-51.82	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.07 R	13.13	73.00	0.0	0.00	0.00	0.00	
		-81.24 R	-62.50	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00	
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.73	1.27	11.73	1.27	HS 25.43	45.8
HS20	19.55	2.12	19.55	2.12	HS 42.38	76.3
2F1	29.99	4.90	29.99	4.90	0.00	73.5
3F1	20.85	3.28	20.85	3.28	0.00	75.4
4F1	19.25	2.72	19.25	2.72	0.00	73.4

5C1	25.18	2.99	25.18	2.99	0.00	119.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.700	999999.000	86.765

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	213.1	-126.1	190.8	-148.4
OPER	301.2C	-264.1	264.1	-301.2C	355.1	-210.2	318.0	-247.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00		
OPER	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00		
OPER	2F1	10.96 R	8.43	67.50	0.0	0.00	0.00	0.00			
		-45.02 L	-34.63	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.76 R	12.12	70.00	0.0	0.00	0.00	0.00			
		-67.36 R	-51.82	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.07 R	13.13	73.00	0.0	0.00	0.00	0.00			
		-81.24 R	-62.50	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00			
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.68	1.21	11.35	1.42	HS 24.21	43.6
HS20	21.13	2.02	18.92	2.37	HS 40.36	72.6
2F1	32.42	4.67	29.03	5.49	0.00	70.0
3F1	22.53	3.12	20.18	3.67	0.00	71.8
4F1	20.80	2.59	18.63	3.04	0.00	69.8
5C1	27.22	2.84	24.37	3.35	0.00	113.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-11.6	10.1

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-71.7	63.3
OPER	151.4	-119.5	105.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.73	34.96	-28.25	26.89	-26.68	26.43	-20.53	20.33
OPER	HS20	-36.73	34.96	-28.25	26.89	-26.68	26.43	-20.53	20.33
OPER	2F1	-20.02	19.64	-15.40	15.11	0.00	0.00	0.00	0.00
OPER	3F1	-28.68	27.65	-22.06	21.27	0.00	0.00	0.00	0.00
OPER	4F1	-30.81	29.21	-23.70	22.47	0.00	0.00	0.00	0.00
OPER	5C1	-27.33	26.82	-21.02	20.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.95	1.81	HS 36.22	65.2
HS20	3.25	3.02	HS 60.37	108.7
2F1	5.97	5.37	0.00	80.6
3F1	4.16	3.82	0.00	87.8
4F1	3.88	3.61	0.00	97.5
5C1	4.37	3.93	0.00	157.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.4	143.2	-186.3	143.2	-186.3	197.1	-132.4	197.1	-
OPER 220.7	274.6	-274.6	274.6	-274.6	328.5	-220.7	328.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	2F1	10.96 R	8.43	67.50	0.0	0.00	0.00	0.00	
		-45.02 L	-34.63	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.76 R	12.12	70.00	0.0	0.00	0.00	0.00	
		-67.36 R	-51.82	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.07 R	13.13	73.00	0.0	0.00	0.00	0.00	
		-81.24 R	-62.50	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00	
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.73	1.27	11.73	1.27	HS 25.43	45.8
HS20	19.55	2.12	19.55	2.12	HS 42.38	76.3
2F1	29.99	4.90	29.99	4.90	0.00	73.5
3F1	20.85	3.28	20.85	3.28	0.00	75.4
4F1	19.25	2.72	19.25	2.72	0.00	73.4

5C1	25.18	2.99	25.18	2.99	0.00	119.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.5
Superimposed Dead Load Moment -26.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	198.2	-140.9	176.0	-163.2
OPER	301.2C	-264.1	264.1	-301.2C	330.4	-234.9	293.3	-272.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50			
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50		
OPER	HS20	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50			
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50		
OPER	2F1	12.87 R	9.90	37.50	0.0	0.00	0.00	0.00			
		-39.30 L	-30.23	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	9.50 R	7.31	41.50	0.0	0.00	0.00	0.00			
		-56.54 L	-43.49	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	9.00 R	6.93	74.00	0.0	0.00	0.00	0.00			
		-61.15 L	-47.04	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	21.50 R	16.54	78.50	0.0	0.00	0.00	0.00			
		-55.28 L	-42.52	-3.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.22	2.07	8.18	2.40	HS 41.38	74.5
HS20	15.37	3.45	13.64	3.99	HS 68.97	124.1
2F1	25.68	5.98	22.79	6.92	0.00	89.6
3F1	34.78	4.15	30.87	4.81	0.00	95.5
4F1	36.69	3.84	32.57	4.45	0.00	103.7
5C1	15.37	4.25	13.64	4.92	0.00	170.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-75.2	64.5
OPER	151.4	-125.3	107.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	2F1	-2.04	17.51	-1.57	13.47	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.31	-2.25	18.70	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.21	-2.43	19.40	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	23.53	-2.43	18.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.09	2.13	HS 42.66	76.8
HS20	41.82	3.56	HS 71.10	128.0
2F1	61.50	6.14	0.00	92.2
3F1	42.75	4.43	0.00	101.8
4F1	39.62	4.27	0.00	115.2
5C1	39.61	4.57	0.00	182.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.5
Superimposed Dead Load Moment -26.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.3	153.1	-176.5	153.1	-176.5	182.3	-147.3	182.3	-
OPER 245.4	274.6	-274.6	274.6	-274.6	303.8	-245.4	303.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50	
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50
OPER	HS20	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50	
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50
OPER	2F1	12.87 R	9.90	37.50	0.0	0.00	0.00	0.00	
		-39.30 L	-30.23	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	9.50 R	7.31	41.50	0.0	0.00	0.00	0.00	
		-56.54 L	-43.49	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.00 R	6.93	74.00	0.0	0.00	0.00	0.00	
		-61.15 L	-47.04	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.50 R	16.54	78.50	0.0	0.00	0.00	0.00	
		-55.28 L	-42.52	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.48	2.16	8.48	2.16	HS 43.24	77.8
HS20	14.13	3.60	14.13	3.60	HS 72.07	129.7
2F1	23.61	6.24	23.61	6.24	0.00	93.7
3F1	31.98	4.34	31.98	4.34	0.00	99.8
4F1	33.74	4.01	33.74	4.01	0.00	108.4

5C1	14.13	4.44	14.13	4.44	0.00	177.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -8.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	186.5	-152.7	164.2	-174.9
OPER	301.2C	-264.1	264.1	-301.2C	310.8	-254.4	273.7	-291.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00			
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00	47.50		
OPER	HS20	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00			
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00	47.50		
OPER	2F1	37.72 R	29.02	40.00	0.0	0.00	0.00	0.00			
		-33.59 L	-25.84	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	45.82 R	35.25	44.00	0.0	0.00	0.00	0.00			
		-48.32 L	-37.17	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.21 R	32.47	44.00	0.0	0.00	0.00	0.00			
		-52.26 L	-40.20	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.35 R	35.65	81.00	0.0	0.00	0.00	0.00			
		-44.93 L	-34.56	1.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.19	2.74	2.81	3.14	HS 54.73	98.5
HS20	5.32	4.56	4.69	5.23	HS 91.22	164.2
2F1	8.24	7.57	7.26	8.68	0.00	108.8
3F1	6.78	5.26	5.97	6.03	0.00	121.1
4F1	7.36	4.87	6.49	5.58	0.00	131.5
5C1	6.71	5.66	5.91	6.49	0.00	226.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.4	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.52	-2.30	19.63	-4.20	21.08	-3.23	16.22
OPER	HS20	-2.99	25.52	-2.30	19.63	-4.20	21.08	-3.23	16.22
OPER	2F1	-2.04	15.29	-1.57	11.76	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.82	-2.25	16.01	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.39	-2.43	16.46	0.00	0.00	0.00	0.00
OPER	5C1	-4.74	20.12	-3.65	15.47	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.62	2.58	HS 51.55	92.8
HS20	29.37	4.30	HS 85.92	154.7
2F1	60.49	7.17	0.00	107.6
3F1	42.05	5.27	0.00	121.1
4F1	38.97	5.12	0.00	138.4
5C1	25.99	5.45	0.00	218.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -8.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	160.9	-168.6	160.9	-168.6	170.6	-159.0	170.6	-
159.0								
OPER	274.6	-274.6	274.6	-274.6	284.3	-265.0	284.3	-
265.0								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00	
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00	47.50
OPER	HS20	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00	
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00	47.50
OPER	2F1	37.72 R	29.02	40.00	0.0	0.00	0.00	0.00	
		-33.59 L	-25.84	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.82 R	35.25	44.00	0.0	0.00	0.00	0.00	
		-48.32 L	-37.17	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.21 R	32.47	44.00	0.0	0.00	0.00	0.00	
		-52.26 L	-40.20	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.35 R	35.65	81.00	0.0	0.00	0.00	0.00	
		-44.93 L	-34.56	1.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.92	2.85	2.92	2.85	HS 57.01	102.6
HS20	4.87	4.75	4.87	4.75	HS 95.01	171.0
2F1	7.54	7.89	7.54	7.89	0.00	113.0
3F1	6.20	5.48	6.20	5.48	0.00	126.1
4F1	6.74	5.07	6.74	5.07	0.00	136.9

5C1	6.13	5.90	6.13	5.90	0.00	235.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	177.9	-161.3	155.6	-183.6
OPER	301.2C	-264.1	264.1	-301.2C	296.5	-268.8	259.3	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50			
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00		
OPER	HS20	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50			
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00		
OPER	2F1	55.88 R	42.99	42.50	0.0	0.00	0.00	0.00			
		-27.87 L	-21.44	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	70.88 R	54.52	46.50	0.0	0.00	0.00	0.00			
		-40.10 L	-30.85	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	72.79 R	55.99	46.50	0.0	0.00	0.00	0.00			
		-43.37 L	-33.36	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	66.63 R	51.25	83.50	0.0	0.00	0.00	0.00			
		-39.88 L	-30.68	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.08	3.48	1.82	3.96	HS 36.36	65.4
HS20	3.46	5.81	3.03	6.61	HS 60.60	109.1
2F1	5.30	9.64	4.64	10.98	0.00	69.6
3F1	4.18	6.70	3.66	7.63	0.00	84.2
4F1	4.07	6.20	3.56	7.05	0.00	96.2
5C1	4.45	6.74	3.89	7.67	0.00	155.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

2.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.7	67.0
OPER	151.4	-121.2	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.36	20.66	-3.35	15.89	-6.46	18.14	-4.97	13.95
OPER	HS20	-4.36	20.66	-3.35	15.89	-6.46	18.14	-4.97	13.95
OPER	2F1	-3.58	12.90	-2.75	9.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.84	17.18	-2.95	13.21	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.56	-2.43	13.51	0.00	0.00	0.00	0.00
OPER	5C1	-6.58	16.82	-5.06	12.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.25	3.24	HS 64.88	116.8
HS20	18.75	5.41	HS 108.13	194.6
2F1	33.88	8.66	0.00	129.9
3F1	31.58	6.50	0.00	149.6
4F1	38.31	6.36	0.00	171.7
5C1	18.41	6.64	0.00	265.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.6	166.7	-162.9	166.7	-162.9	161.9	-167.6	161.9	-
OPER 279.4	274.6	-274.6	274.6	-274.6	269.9	-279.4	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50	
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00
OPER	HS20	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50	
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00
OPER	2F1	55.88 R	42.99	42.50	0.0	0.00	0.00	0.00	
		-27.87 L	-21.44	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	70.88 R	54.52	46.50	0.0	0.00	0.00	0.00	
		-40.10 L	-30.85	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.79 R	55.99	46.50	0.0	0.00	0.00	0.00	
		-43.37 L	-33.36	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.63 R	51.25	83.50	0.0	0.00	0.00	0.00	
		-39.88 L	-30.68	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.89	3.62	1.89	3.62	HS 37.84	68.1
HS20	3.15	6.03	3.15	6.03	HS 63.06	113.5
2F1	4.83	10.02	4.83	10.02	0.00	72.4
3F1	3.81	6.97	3.81	6.97	0.00	87.6
4F1	3.71	6.44	3.71	6.44	0.00	100.1

5C1	4.05	7.01	4.05	7.01	0.00	162.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	172.3	-166.8	150.1	-189.1
OPER	301.2C	-264.1	264.1	-301.2C	287.2	-278.0	250.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00			
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00		
OPER	HS20	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00			
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00		
OPER	2F1	65.81 R	50.63	45.00	0.0	0.00	0.00	0.00			
		-22.16 L	-17.05	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.16 R	64.74	45.00	0.0	0.00	0.00	0.00			
		-31.88 L	-24.52	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.26 R	69.43	49.00	0.0	0.00	0.00	0.00			
		-34.48 L	-26.52	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.88 R	62.21	47.00	0.0	0.00	0.00	0.00			
		-36.33 L	-27.94	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.79	4.53	1.56	5.14	HS 31.17	56.1
HS20	2.98	7.55	2.60	8.56	HS 51.94	93.5
2F1	4.36	12.55	3.80	14.22	0.00	57.0
3F1	3.41	8.72	2.97	9.89	0.00	68.3
4F1	3.18	8.06	2.77	9.14	0.00	74.8
5C1	3.55	7.65	3.09	8.68	0.00	123.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

2.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.5	68.3
OPER	151.4	-119.1	113.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.95	11.65
OPER	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.95	11.65
OPER	2F1	-5.65	10.44	-4.35	8.03	0.00	0.00	0.00	0.00
OPER	3F1	-6.72	13.54	-5.17	10.41	0.00	0.00	0.00	0.00
OPER	4F1	-5.68	13.53	-4.37	10.40	0.00	0.00	0.00	0.00
OPER	5C1	-8.66	14.27	-6.66	10.98	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.91	4.02	HS 80.35	144.6
HS20	13.19	6.70	HS 133.91	241.0
2F1	21.07	10.90	0.00	163.5
3F1	17.72	8.40	0.00	193.3
4F1	20.95	8.41	0.00	227.1
5C1	13.75	7.97	0.00	318.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.400 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	170.4	-159.2	170.4	-159.2	156.4	-173.2	156.4	-
OPER 288.6	274.6	-274.6	274.6	-274.6	260.7	-288.6	260.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00	
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00
OPER	HS20	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00	
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00
OPER	2F1	65.81 R	50.63	45.00	0.0	0.00	0.00	0.00	
		-22.16 L	-17.05	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.16 R	64.74	45.00	0.0	0.00	0.00	0.00	
		-31.88 L	-24.52	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.26 R	69.43	49.00	0.0	0.00	0.00	0.00	
		-34.48 L	-26.52	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.88 R	62.21	47.00	0.0	0.00	0.00	0.00	
		-36.33 L	-27.94	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	4.70	1.62	4.70	HS 32.48	58.5
HS20	2.71	7.84	2.71	7.84	HS 54.13	97.4
2F1	3.96	13.02	3.96	13.02	0.00	59.4
3F1	3.10	9.05	3.10	9.05	0.00	71.2
4F1	2.89	8.37	2.89	8.37	0.00	78.0

5C1	3.22	7.94	3.22	7.94	0.00	128.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	108.692

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		18.20		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.1
 Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	178.0	-164.6	125.9	-199.7
OPER	314.7C	-256.3	227.8	-314.7C	296.7	-274.3	209.8	-332.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50			
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00		
OPER	HS20	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50			
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00		
OPER	2F1	67.00 R	51.54	47.50	0.0	0.00	0.00	0.00			
		-16.45 L	-12.65	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.53 L	68.87	27.50	0.0	0.00	0.00	0.00			
		-23.66 L	-18.20	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.51 R	71.93	51.50	0.0	0.00	0.00	0.00			
		-25.59 L	-19.68	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.46 R	65.73	88.50	0.0	0.00	0.00	0.00			
		-34.37 L	-26.44	6.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.89	6.03	1.34	7.31	HS 26.76	48.2
HS20	3.15	10.04	2.23	12.18	HS 44.59	80.3
2F1	4.43	16.68	3.13	20.23	0.00	47.0
3F1	3.31	11.59	2.34	14.06	0.00	53.9
4F1	3.17	10.72	2.24	13.01	0.00	60.6
5C1	3.47	7.98	2.45	9.68	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1	0.0	0.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.4	-117.0	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.09	13.29	-10.07	10.22	-11.82	12.21	-9.10	9.39
OPER	HS20	-13.09	13.29	-10.07	10.22	-11.82	12.21	-9.10	9.39
OPER	2F1	-7.94	8.01	-6.11	6.16	0.00	0.00	0.00	0.00
OPER	3F1	-9.95	10.05	-7.66	7.73	0.00	0.00	0.00	0.00
OPER	4F1	-9.28	9.39	-7.14	7.22	0.00	0.00	0.00	0.00
OPER	5C1	-10.94	11.67	-8.41	8.98	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.37	5.23	HS 104.58	188.2
HS20	8.94	8.72	HS 174.30	313.7
2F1	14.74	14.47	0.00	217.0
3F1	11.76	11.53	0.00	265.2
4F1	12.61	12.33	0.00	333.0
5C1	10.70	9.93	0.00	397.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	167.1	-152.7	149.4	-135.0	149.1	-170.7	131.3	-
OPER 255.0	266.5	-266.5	236.9	-236.9	248.5	-284.5	218.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50	
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00
OPER	HS20	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50	
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00
OPER	2F1	67.00 R	51.54	47.50	0.0	0.00	0.00	0.00	
		-16.45 L	-12.65	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.53 L	68.87	27.50	0.0	0.00	0.00	0.00	
		-23.66 L	-18.20	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.51 R	71.93	51.50	0.0	0.00	0.00	0.00	
		-25.59 L	-19.68	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.46 R	65.73	88.50	0.0	0.00	0.00	0.00	
		-34.37 L	-26.44	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	6.25	1.40	5.60	HS 27.92	50.3
HS20	2.64	10.42	2.33	9.34	HS 46.53	83.8
2F1	3.71	17.30	3.27	15.50	0.00	49.0
3F1	2.78	12.03	2.44	10.78	0.00	56.2
4F1	2.66	11.12	2.34	9.96	0.00	63.2

5C1	2.91	8.28	2.56	7.42	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	170.7	-168.5	148.4	-190.8
OPER	301.2C	-264.1	264.1	-301.2C	284.4	-280.8	247.3	-318.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00			
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00		
OPER	HS20	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00			
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00		
OPER	2F1	66.00 L	50.77	30.00	0.0	0.00	0.00	0.00			
		-19.60 R	-15.08	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.48 L	64.99	30.00	0.0	0.00	0.00	0.00			
		-28.20 R	-21.69	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.59 L	69.69	26.00	0.0	0.00	0.00	0.00			
		-30.54 R	-23.49	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.58 L	64.29	28.00	0.0	0.00	0.00	0.00			
		-34.06 R	-26.20	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.78	5.60	1.54	6.34	HS 30.89	55.6
HS20	2.96	9.34	2.57	10.57	HS 51.48	92.7
2F1	4.31	14.33	3.75	16.22	0.00	56.2
3F1	3.37	9.96	2.93	11.28	0.00	67.3
4F1	3.14	9.20	2.73	10.41	0.00	73.7
5C1	3.40	8.24	2.96	9.34	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.5	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.9	70.8
OPER	151.4	-114.9	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.75	9.12	-12.89	7.02	-14.76	9.41	-11.36	7.24
OPER	HS20	-16.75	9.12	-12.89	7.02	-14.76	9.41	-11.36	7.24
OPER	2F1	-10.36	5.71	-7.97	4.39	0.00	0.00	0.00	0.00
OPER	3F1	-13.44	6.82	-10.34	5.24	0.00	0.00	0.00	0.00
OPER	4F1	-13.42	5.83	-10.32	4.49	0.00	0.00	0.00	0.00
OPER	5C1	-13.41	9.45	-10.31	7.27	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.11	7.52	HS 82.31	148.2
HS20	6.86	12.54	HS 137.18	246.9
2F1	11.09	20.67	0.00	166.3
3F1	8.55	17.30	0.00	196.7
4F1	8.56	20.23	0.00	231.2
5C1	8.57	12.48	0.00	342.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	171.5	-158.1	171.5	-158.1	154.7	-174.8	154.7	-
174.8								
OPER	274.6	-274.6	274.6	-274.6	257.9	-291.4	257.9	-
291.4								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00	
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00
OPER	HS20	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00	
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00
OPER	2F1	66.00 L	50.77	30.00	0.0	0.00	0.00	0.00	
		-19.60 R	-15.08	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.48 L	64.99	30.00	0.0	0.00	0.00	0.00	
		-28.20 R	-21.69	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.59 L	69.69	26.00	0.0	0.00	0.00	0.00	
		-30.54 R	-23.49	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.58 L	64.29	28.00	0.0	0.00	0.00	0.00	
		-34.06 R	-26.20	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.81	1.61	5.82	HS 32.21	58.0
HS20	2.68	9.69	2.68	9.69	HS 53.68	96.6
2F1	3.91	14.87	3.91	14.87	0.00	58.6
3F1	3.05	10.33	3.05	10.33	0.00	70.2
4F1	2.85	9.54	2.85	9.54	0.00	76.9

5C1

3.09

8.56

3.09

8.56

0.00

123.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.89	8.24	8.24	0.62	1.78
			9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	174.5	-164.6	152.2	-186.9
OPER	301.2C	-264.1	264.1	-301.2C	290.9	-274.4	253.7	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50			
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00		0.00	
OPER	HS20	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50			
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00		0.00	
OPER	2F1	56.28 L	43.29	32.50	0.0	0.00	0.00	0.00			
		-24.69 R	-18.99	67.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	71.44 L	54.95	28.50	0.0	0.00	0.00	0.00			
		-35.52 R	-27.33	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	73.41 L	56.47	28.50	0.0	0.00	0.00	0.00			
		-38.47 R	-29.59	73.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	72.10 R	55.46	89.50	0.0	0.00	0.00	0.00			
		-36.32 R	-27.94	71.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.03	4.35	1.77	4.93	HS 35.41	63.7
HS20	3.38	7.24	2.95	8.22	HS 59.02	106.2
2F1	5.17	11.11	4.51	12.62	0.00	67.6
3F1	4.07	7.72	3.55	8.77	0.00	81.7
4F1	3.96	7.13	3.46	8.10	0.00	93.3
5C1	4.03	7.55	3.52	8.58	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

2.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.4	-112.8	120.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.51	4.55	-15.78	3.50	-17.76	6.83	-13.66	5.25
OPER	HS20	-20.51	4.55	-15.78	3.50	-17.76	6.83	-13.66	5.25
OPER	2F1	-12.83	3.62	-9.87	2.79	0.00	0.00	0.00	0.00
OPER	3F1	-17.07	3.95	-13.13	3.03	0.00	0.00	0.00	0.00
OPER	4F1	-17.45	3.54	-13.43	2.73	0.00	0.00	0.00	0.00
OPER	5C1	-16.46	7.31	-12.66	5.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.30	10.55	HS 66.01	118.8
HS20	5.50	17.58	HS 110.02	198.0
2F1	8.80	33.12	0.00	132.0
3F1	6.61	30.42	0.00	152.0
4F1	6.46	33.88	0.00	174.5
5C1	6.86	16.42	0.00	274.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.0	168.9	-160.6	168.9	-160.6	158.6	-171.0	158.6	-
OPER 285.0	274.6	-274.6	274.6	-274.6	264.3	-285.0	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50	
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00	0.00
OPER	HS20	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50	
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00	0.00
OPER	2F1	56.28 L	43.29	32.50	0.0	0.00	0.00	0.00	
		-24.69 R	-18.99	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.44 L	54.95	28.50	0.0	0.00	0.00	0.00	
		-35.52 R	-27.33	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.41 L	56.47	28.50	0.0	0.00	0.00	0.00	
		-38.47 R	-29.59	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.10 R	55.46	89.50	0.0	0.00	0.00	0.00	
		-36.32 R	-27.94	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.84	4.51	1.84	4.51	HS 36.88	66.4
HS20	3.07	7.52	3.07	7.52	HS 61.47	110.7
2F1	4.70	11.54	4.70	11.54	0.00	70.4
3F1	3.70	8.02	3.70	8.02	0.00	85.1
4F1	3.60	7.41	3.60	7.41	0.00	97.2

5C1	3.66	7.84	3.67	7.84	0.00	146.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.5	-157.7	159.2	-180.0
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.8	265.3	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00			
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00		
OPER	HS20	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00			
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00		
OPER	2F1	38.27 L	29.44	35.00	0.0	0.00	0.00	0.00			
		-29.78 R	-22.91	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.65 L	35.88	31.00	0.0	0.00	0.00	0.00			
		-42.85 R	-32.96	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.97 L	33.06	31.00	0.0	0.00	0.00	0.00			
		-46.41 R	-35.70	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.28 R	41.75	92.00	0.0	0.00	0.00	0.00			
		-40.19 R	-30.92	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	3.06	3.45	2.68	3.94	HS 53.71	96.7
HS20	5.10	5.75	4.48	6.56	HS 89.51	161.1
2F1	7.90	8.82	6.93	10.07	0.00	104.0
3F1	6.48	6.13	5.69	7.00	0.00	130.8
4F1	7.04	5.66	6.17	6.46	0.00	152.9
5C1	5.57	6.54	4.89	7.46	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.3
OPER	151.4	-110.8	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.34	3.65	-19.49	2.81	-20.71	4.54	-15.93	3.49
OPER	HS20	-25.34	3.65	-19.49	2.81	-20.71	4.54	-15.93	3.49
OPER	2F1	-15.22	2.29	-11.71	1.76	0.00	0.00	0.00	0.00
OPER	3F1	-20.72	3.29	-15.94	2.53	0.00	0.00	0.00	0.00
OPER	4F1	-21.27	3.54	-16.36	2.73	0.00	0.00	0.00	0.00
OPER	5C1	-19.66	5.29	-15.12	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.62	16.13	HS 52.45	94.4
HS20	4.37	26.88	HS 87.42	157.4
2F1	7.28	53.42	0.00	109.1
3F1	5.35	37.13	0.00	123.0
4F1	5.21	34.46	0.00	140.6
5C1	5.64	23.08	0.00	225.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 164.0	164.3	-165.3	164.3	-165.3	165.5	-164.0	165.5	-
OPER 273.4	274.6	-274.6	274.6	-274.6	275.9	-273.4	275.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00	
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00
OPER	HS20	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00	
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00
OPER	2F1	38.27 L	29.44	35.00	0.0	0.00	0.00	0.00	
		-29.78 R	-22.91	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.65 L	35.88	31.00	0.0	0.00	0.00	0.00	
		-42.85 R	-32.96	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.97 L	33.06	31.00	0.0	0.00	0.00	0.00	
		-46.41 R	-35.70	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.28 R	41.75	92.00	0.0	0.00	0.00	0.00	
		-40.19 R	-30.92	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.59	2.79	3.59	HS 55.84	100.5
HS20	4.65	5.98	4.65	5.98	HS 93.07	167.5
2F1	7.21	9.18	7.21	9.18	0.00	108.1
3F1	5.91	6.38	5.91	6.38	0.00	136.0
4F1	6.42	5.89	6.42	5.89	0.00	159.1

5C1

5.08

6.80

5.08

6.80

0.00

203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 2.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	191.5	-147.6	169.3	-169.9
OPER	301.2C	-264.1	264.1	-301.2C	319.2	-246.1	282.1	-283.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50			
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50		
OPER	HS20	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50			
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50		
OPER	2F1	13.43 L	10.33	37.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.49 R	10.38	95.00	0.0	0.00	0.00	0.00			
		-50.18 R	-38.60	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.41 R	11.09	99.00	0.0	0.00	0.00	0.00			
		-54.34 R	-41.80	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.16 R	21.66	94.50	0.0	0.00	0.00	0.00			
		-46.73 R	-35.95	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	7.52	2.50	6.64	2.88	HS 50.05	90.1
HS20	12.53	4.17	11.07	4.80	HS 83.42	150.2
2F1	23.77	7.05	21.01	8.12	0.00	105.8
3F1	23.66	4.90	20.91	5.64	0.00	112.8
4F1	22.15	4.53	19.57	5.21	0.00	122.3
5C1	11.34	5.26	10.02	6.06	0.00	210.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-7.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.2	74.5
OPER	151.4	-108.7	124.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	3.80	-23.12	2.92	-23.53	3.52	-18.10	2.70
OPER	HS20	-30.06	3.80	-23.12	2.92	-23.53	3.52	-18.10	2.70
OPER	2F1	-17.46	2.29	-13.43	1.76	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	3.29	-18.63	2.53	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	3.56	-19.32	2.74	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	3.51	-17.59	2.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.17	19.63	HS 43.39	78.1
HS20	3.62	32.71	HS 72.31	130.2
2F1	6.23	54.33	0.00	93.4
3F1	4.49	37.76	0.00	103.2
4F1	4.33	34.92	0.00	116.9
5C1	4.75	35.33	0.00	190.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.0	157.6	-172.0	157.6	-172.0	175.6	-154.0	175.6	-
OPER 256.6	274.6	-274.6	274.6	-274.6	292.6	-256.6	292.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50	
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50
OPER	HS20	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50	
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50
OPER	2F1	13.43 L	10.33	37.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.49 R	10.38	95.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.41 R	11.09	99.00	0.0	0.00	0.00	0.00	
		-54.34 R	-41.80	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	94.50	0.0	0.00	0.00	0.00	
		-46.73 R	-35.95	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.89	2.61	6.89	2.61	HS 52.20	94.0
HS20	11.49	4.35	11.49	4.35	HS 87.00	156.6
2F1	21.79	7.36	21.79	7.36	0.00	110.4
3F1	21.69	5.11	21.69	5.11	0.00	117.6
4F1	20.30	4.72	20.30	4.72	0.00	127.5

5C1 10.39 5.49 10.39 5.49 0.00 219.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.89	8.24	8.24	0.62	1.78
			9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.8
OPER	301.2C	-264.1	264.1	-301.2C	341.1	-224.1	304.0	-261.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00			
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00		
OPER	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00			
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00		
OPER	2F1	12.12 L	9.33	7.50	0.0	0.00	0.00	0.00			
		-39.97 R	-30.75	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.44 L	13.42	5.00	0.0	0.00	0.00	0.00			
		-63.22 L	-48.63	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.86 L	14.51	2.00	0.0	0.00	0.00	0.00			
		-74.75 L	-57.50	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00			
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.17	1.37	9.06	1.59	HS 27.30	49.1
HS20	16.94	2.28	15.10	2.65	HS 45.49	81.9
2F1	28.14	5.61	25.08	6.54	0.00	84.1
3F1	19.56	3.55	17.43	4.13	0.00	81.5
4F1	18.08	3.00	16.12	3.49	0.00	81.0
5C1	21.97	3.77	19.58	4.40	0.00	151.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-7.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.0	63.7
OPER	151.4	-106.6	106.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.29	-18.10	20.22
OPER	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.29	-18.10	20.22
OPER	2F1	-17.46	19.45	-13.43	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	27.47	-18.63	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	29.05	-19.32	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	25.91	-17.59	19.93	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.86	1.85	HS 36.91	66.4
HS20	3.09	3.08	HS 61.52	110.7
2F1	5.49	5.46	0.00	81.9
3F1	3.89	3.87	0.00	88.9
4F1	3.68	3.66	0.00	98.7
5C1	4.11	4.10	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.7	-140.8	188.7	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	2F1	12.12 L	9.33	7.50	0.0	0.00	0.00	0.00	
		-39.97 R	-30.75	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.44 L	13.42	5.00	0.0	0.00	0.00	0.00	
		-63.22 L	-48.63	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.86 L	14.51	2.00	0.0	0.00	0.00	0.00	
		-74.75 L	-57.50	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00	
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.37	1.43	9.37	1.43	HS 28.58	51.4
HS20	15.62	2.38	15.62	2.38	HS 47.64	85.7
2F1	25.95	5.87	25.95	5.87	0.00	88.1
3F1	18.04	3.71	18.04	3.71	0.00	85.4
4F1	16.68	3.14	16.68	3.14	0.00	84.8

5C1	20.26	3.95	20.26	3.95	0.00	158.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.8
OPER	301.2C	-264.1	264.1	-301.2C	341.1	-224.1	304.0	-261.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00			
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00		
OPER	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00			
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00		
OPER	2F1	12.12 L	9.33	7.50	0.0	0.00	0.00	0.00			
		-39.97 R	-30.75	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.44 L	13.42	5.00	0.0	0.00	0.00	0.00			
		-63.22 L	-48.63	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.86 L	14.51	2.00	0.0	0.00	0.00	0.00			
		-74.75 L	-57.50	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00			
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.17	1.37	9.06	1.59	HS 27.30	49.1
HS20	16.94	2.28	15.10	2.65	HS 45.49	81.9
2F1	28.14	5.61	25.08	6.54	0.00	84.1
3F1	19.56	3.55	17.43	4.13	0.00	81.5
4F1	18.08	3.00	16.12	3.49	0.00	81.0
5C1	21.97	3.77	19.58	4.40	0.00	151.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-9.1	9.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.0	63.7
OPER	151.4	-106.6	106.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.48	34.53	-26.53	26.56	-26.11	26.29	-20.08	20.22
OPER	HS20	-34.48	34.53	-26.53	26.56	-26.11	26.29	-20.08	20.22
OPER	2F1	-19.44	19.45	-14.95	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.44	27.47	-21.11	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.01	29.05	-22.31	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-25.93	25.91	-19.95	19.93	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.86	1.85	HS 36.91	66.4
HS20	3.09	3.08	HS 61.52	110.7
2F1	5.49	5.46	0.00	81.9
3F1	3.89	3.87	0.00	88.9
4F1	3.68	3.66	0.00	98.7
5C1	4.11	4.10	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.7	-140.8	188.7	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	2F1	12.12 L	9.33	7.50	0.0	0.00	0.00	0.00	
		-39.97 R	-30.75	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.44 L	13.42	5.00	0.0	0.00	0.00	0.00	
		-63.22 L	-48.63	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.86 L	14.51	2.00	0.0	0.00	0.00	0.00	
		-74.75 L	-57.50	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00	
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.37	1.43	9.37	1.43	HS 28.58	51.4
HS20	15.62	2.38	15.62	2.38	HS 47.64	85.7
2F1	25.95	5.87	25.95	5.87	0.00	88.1
3F1	18.04	3.71	18.04	3.71	0.00	85.4
4F1	16.68	3.14	16.68	3.14	0.00	84.8

5C1	20.26	3.95	20.26	3.95	0.00	158.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	190.9	-148.3	168.6	-170.5
OPER	301.2C	-264.1	264.1	-301.2C	318.2	-247.1	281.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50			
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00	62.50		
OPER	HS20	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50			
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00	62.50		
OPER	2F1	13.48 R	10.37	62.50	0.0	0.00	0.00	0.00	0.00		
		-34.85 L	-26.81	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.23 L	11.72	5.00	0.0	0.00	0.00	0.00	0.00		
		-50.14 L	-38.57	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.31 L	12.54	1.00	0.0	0.00	0.00	0.00	0.00		
		-54.33 L	-41.80	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.47 L	22.67	5.50	0.0	0.00	0.00	0.00	0.00		
		-46.79 L	-35.99	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.34	2.52	6.48	2.90	HS 50.37	90.7
HS20	12.23	4.20	10.80	4.83	HS 83.94	151.1
2F1	23.61	7.09	20.86	8.16	0.00	106.4
3F1	20.89	4.93	18.45	5.67	0.00	113.3
4F1	19.51	4.55	17.24	5.23	0.00	122.8
5C1	10.80	5.28	9.54	6.07	0.00	211.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

3.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.7	65.0
OPER	151.4	-124.6	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.24	23.72	-2.49	18.24
OPER	HS20	-2.99	30.12	-2.30	23.17	-3.24	23.72	-2.49	18.24
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.26	-2.25	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.16	-2.43	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	22.88	-2.44	17.60	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.05	2.16	HS 43.14	77.7
HS20	38.41	3.60	HS 71.90	129.4
2F1	61.25	6.19	0.00	92.9
3F1	42.57	4.46	0.00	102.6
4F1	39.43	4.30	0.00	116.2
5C1	39.20	4.73	0.00	189.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.6	158.0	-171.6	158.0	-171.6	175.0	-154.6	175.0	-
OPER 257.7	274.6	-274.6	274.6	-274.6	291.6	-257.6	291.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50	
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00	62.50
OPER	HS20	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50	
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00	62.50
OPER	2F1	13.48 R	10.37	62.50	0.0	0.00	0.00	0.00	
		-34.85 L	-26.81	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.23 L	11.72	5.00	0.0	0.00	0.00	0.00	
		-50.14 L	-38.57	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.31 L	12.54	1.00	0.0	0.00	0.00	0.00	
		-54.33 L	-41.80	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.47 L	22.67	5.50	0.0	0.00	0.00	0.00	
		-46.79 L	-35.99	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.72	2.63	6.72	2.63	HS 52.52	94.5
HS20	11.20	4.38	11.20	4.38	HS 87.53	157.6
2F1	21.64	7.39	21.64	7.39	0.00	110.9
3F1	19.15	5.14	19.15	5.14	0.00	118.2
4F1	17.88	4.74	17.88	4.74	0.00	128.0

5C1	9.90	5.51	9.90	5.51	0.00	220.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 3.200 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	180.2	-158.9	158.0	-181.2
OPER	301.2C	-264.1	264.1	-301.2C	300.4	-264.9	263.3	-302.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00			
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50		
OPER	HS20	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00			
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50		
OPER	2F1	38.38 R	29.52	65.00	0.0	0.00	0.00	0.00			
		-29.79 L	-22.92	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.81 R	36.01	69.00	0.0	0.00	0.00	0.00			
		-42.86 L	-32.97	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.12 R	33.17	69.00	0.0	0.00	0.00	0.00			
		-46.45 L	-35.73	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	55.29 L	42.53	8.00	0.0	0.00	0.00	0.00			
		-40.24 L	-30.95	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.03	3.50	2.66	3.99	HS 53.17	95.7
HS20	5.06	5.83	4.43	6.64	HS 88.62	159.5
2F1	7.83	8.89	6.86	10.14	0.00	102.9
3F1	6.42	6.18	5.62	7.05	0.00	129.4
4F1	6.97	5.70	6.11	6.50	0.00	154.0
5C1	5.43	6.58	4.76	7.51	0.00	190.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

3.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.2
OPER	151.4	-122.5	110.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.48	20.91	-3.44	16.08
OPER	HS20	-2.99	25.40	-2.30	19.54	-4.48	20.91	-3.44	16.08
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.77	-2.25	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.31	-2.43	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.77	19.69	-3.67	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.42	2.61	HS 52.13	93.8
HS20	27.37	4.34	HS 86.88	156.4
2F1	60.24	7.24	0.00	108.5
3F1	41.86	5.31	0.00	122.2
4F1	38.78	5.18	0.00	139.8
5C1	25.71	5.60	0.00	224.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 165.3	165.1	-164.5	165.1	-164.5	164.3	-165.3	164.3	-
OPER 275.4	274.6	-274.6	274.6	-274.6	273.8	-275.4	273.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00	
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50
OPER	HS20	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00	
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50
OPER	2F1	38.38 R	29.52	65.00	0.0	0.00	0.00	0.00	
		-29.79 L	-22.92	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.81 R	36.01	69.00	0.0	0.00	0.00	0.00	
		-42.86 L	-32.97	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.12 R	33.17	69.00	0.0	0.00	0.00	0.00	
		-46.45 L	-35.73	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.29 L	42.53	8.00	0.0	0.00	0.00	0.00	
		-40.24 L	-30.95	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.77	3.64	2.77	3.64	HS 55.30	99.5
HS20	4.61	6.06	4.61	6.06	HS 92.17	165.9
2F1	7.14	9.25	7.14	9.25	0.00	107.0
3F1	5.85	6.43	5.85	6.43	0.00	134.5
4F1	6.35	5.93	6.35	5.93	0.00	160.1

5C1 4.95 6.84 4.95 6.84 0.00 198.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	172.7	-166.5	150.4	-188.8
OPER	301.2C	-264.1	264.1	-301.2C	287.8	-277.5	250.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50			
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00		
OPER	HS20	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50			
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00		
OPER	2F1	56.49 R	43.45	67.50	0.0	0.00	0.00	0.00			
		-24.73 L	-19.02	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	71.50	0.0	0.00	0.00	0.00			
		-35.58 L	-27.37	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	71.50	0.0	0.00	0.00	0.00			
		-38.56 L	-29.66	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	73.00 L	56.15	10.50	0.0	0.00	0.00	0.00			
		-36.33 L	-27.94	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.00	4.41	1.74	5.00	HS 34.79	62.6
HS20	3.33	7.35	2.90	8.34	HS 57.98	104.4
2F1	5.09	11.22	4.44	12.72	0.00	66.6
3F1	4.01	7.80	3.49	8.84	0.00	80.3
4F1	3.90	7.20	3.40	8.16	0.00	91.8
5C1	3.94	7.64	3.43	8.66	0.00	137.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

3.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-----------------	------------------------	---------------------

0.3

0.0

3.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.4	112.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.75	17.96	-5.19	13.82
OPER	HS20	-4.41	20.57	-3.39	15.82	-6.75	17.96	-5.19	13.82
OPER	2F1	-3.61	12.86	-2.77	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.51	-2.43	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.62	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.71	3.28	HS 65.57	118.0
HS20	17.84	5.46	HS 109.29	196.7
2F1	33.40	8.74	0.00	131.1
3F1	30.68	6.57	0.00	151.0
4F1	38.12	6.42	0.00	173.4
5C1	18.19	6.81	0.00	272.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	170.1	-159.4	170.2	-159.4	156.7	-172.8	156.7	-
OPER 288.1	274.6	-274.6	274.6	-274.6	261.2	-288.1	261.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50	
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00
OPER	HS20	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50	
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00
OPER	2F1	56.49 R	43.45	67.50	0.0	0.00	0.00	0.00	
		-24.73 L	-19.02	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	71.50	0.0	0.00	0.00	0.00	
		-35.58 L	-27.37	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	71.50	0.0	0.00	0.00	0.00	
		-38.56 L	-29.66	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	73.00 L	56.15	10.50	0.0	0.00	0.00	0.00	
		-36.33 L	-27.94	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.58	1.81	4.58	HS 36.25	65.2
HS20	3.02	7.63	3.02	7.63	HS 60.42	108.7
2F1	4.62	11.65	4.62	11.65	0.00	69.4
3F1	3.64	8.10	3.64	8.10	0.00	83.7
4F1	3.54	7.47	3.54	7.47	0.00	95.6

5C1 3.58 7.93 3.58 7.93 0.00 143.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	168.2	-171.0	145.9	-193.2
OPER	301.2C	-264.1	264.1	-301.2C	280.3	-284.9	243.2	-322.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00			
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00		
OPER	HS20	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00			
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00		
OPER	2F1	66.34 R	51.03	70.00	0.0	0.00	0.00	0.00			
		-19.67 L	-15.13	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.92 R	65.32	70.00	0.0	0.00	0.00	0.00			
		-28.31 L	-21.77	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.10 R	70.08	74.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.59	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.06 R	64.66	72.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.04	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	5.70	1.50	6.44	HS 30.09	54.2
HS20	2.89	9.49	2.51	10.73	HS 50.15	90.3
2F1	4.23	14.48	3.67	16.37	0.00	55.0
3F1	3.30	10.07	2.86	11.38	0.00	65.9
4F1	3.08	9.29	2.67	10.50	0.00	72.1
5C1	3.34	8.42	2.89	9.51	0.00	115.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.4	-118.4	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.32	14.97	-7.17	11.52
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.32	14.97	-7.17	11.52
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.38	0.00	0.00	0.00	0.00
OPER	4F1	-5.80	13.48	-4.47	10.37	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.62	4.09	HS 81.87	147.4
HS20	12.70	6.82	HS 136.45	245.6
2F1	20.84	11.00	0.00	165.1
3F1	17.44	8.49	0.00	195.2
4F1	20.39	8.49	0.00	229.3
5C1	13.59	8.51	0.00	340.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	173.1	-156.4	173.1	-156.4	152.3	-177.3	152.3	-
OPER 295.5	274.6	-274.6	274.6	-274.6	253.8	-295.5	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00	
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00
OPER	HS20	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00	
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00
OPER	2F1	66.34 R	51.03	70.00	0.0	0.00	0.00	0.00	
		-19.67 L	-15.13	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.92 R	65.32	70.00	0.0	0.00	0.00	0.00	
		-28.31 L	-21.77	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.10 R	70.08	74.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.06 R	64.66	72.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.04	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.91	1.57	5.91	HS 31.39	56.5
HS20	2.62	9.85	2.62	9.85	HS 52.32	94.2
2F1	3.83	15.02	3.83	15.02	0.00	57.4
3F1	2.99	10.44	2.99	10.44	0.00	68.7
4F1	2.79	9.64	2.79	9.64	0.00	75.2

5C1

3.02

8.73

3.02

8.73

0.00

120.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 21.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	166.8	-172.3	144.5	-194.6
OPER	301.2C	-264.1	264.1	-301.2C	278.0	-287.2	240.9	-324.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50			
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00		
OPER	HS20	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50			
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00		
OPER	2F1	67.43 R	51.87	72.50	0.0	0.00	0.00	0.00			
		-14.68 R	-11.29	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.18 L	69.37	52.50	0.0	0.00	0.00	0.00			
		-21.12 R	-16.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.19 L	72.46	48.50	0.0	0.00	0.00	0.00			
		-22.88 R	-17.60	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.36 L	66.43	11.50	0.0	0.00	0.00	0.00			
		-32.82 R	-25.25	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.76	7.66	1.53	8.65	HS 30.53	55.0
HS20	2.94	12.76	2.54	14.41	HS 50.88	91.6
2F1	4.12	19.57	3.57	22.10	0.00	53.6
3F1	3.08	13.60	2.67	15.36	0.00	61.4
4F1	2.95	12.55	2.56	14.18	0.00	69.1
5C1	3.22	8.75	2.79	9.88	0.00	111.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.4	-116.3	116.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.12	12.04	-9.32	9.26
OPER	HS20	-13.13	13.13	-10.10	10.10	-12.12	12.04	-9.32	9.26
OPER	2F1	-7.97	7.98	-6.13	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.01	-7.69	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.35	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.95	-8.45	8.43	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.33	HS 106.34	191.4
HS20	8.86	8.88	HS 177.24	319.0
2F1	14.59	14.61	0.00	218.8
3F1	11.63	11.65	0.00	267.5
4F1	12.46	12.47	0.00	336.4
5C1	10.59	10.64	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	174.0	-155.5	174.0	-155.5	150.9	-178.7	150.9	-
OPER 297.8	274.6	-274.6	274.6	-274.6	251.5	-297.8	251.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50	
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00
OPER	HS20	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50	
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00
OPER	2F1	67.43 R	51.87	72.50	0.0	0.00	0.00	0.00	
		-14.68 R	-11.29	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.18 L	69.37	52.50	0.0	0.00	0.00	0.00	
		-21.12 R	-16.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.19 L	72.46	48.50	0.0	0.00	0.00	0.00	
		-22.88 R	-17.60	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.36 L	66.43	11.50	0.0	0.00	0.00	0.00	
		-32.82 R	-25.25	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	7.94	1.59	7.94	HS 31.87	57.4
HS20	2.65	13.23	2.66	13.23	HS 53.11	95.6
2F1	3.73	20.29	3.73	20.29	0.00	55.9
3F1	2.79	14.10	2.79	14.10	0.00	64.1
4F1	2.67	13.02	2.67	13.02	0.00	72.1

5C1	2.91	9.07	2.91	9.07	0.00	116.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	168.6	-170.5	146.4	-192.8
OPER	301.2C	-264.1	264.1	-301.2C	281.1	-284.2	243.9	-321.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00			
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00		
OPER	HS20	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00			
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00		
OPER	2F1	66.35 L	51.04	55.00	0.0	0.00	0.00	0.00			
		-19.76 R	-15.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.94 L	65.34	55.00	0.0	0.00	0.00	0.00			
		-28.43 R	-21.87	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.13 L	70.10	51.00	0.0	0.00	0.00	0.00			
		-30.81 R	-23.70	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.03 L	64.64	53.00	0.0	0.00	0.00	0.00			
		-33.94 R	-26.11	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.74	5.63	1.51	6.36	HS 30.17	54.3
HS20	2.90	9.38	2.51	10.60	HS 50.28	90.5
2F1	4.24	14.38	3.68	16.26	0.00	55.1
3F1	3.31	9.99	2.87	11.30	0.00	66.1
4F1	3.08	9.23	2.68	10.43	0.00	72.3
5C1	3.35	8.37	2.90	9.47	0.00	116.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

3.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-2.1	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.2
OPER	151.4	-114.2	118.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.98	-12.91	6.90	-15.05	9.24	-11.58	7.11
OPER	HS20	-16.78	8.98	-12.91	6.90	-15.05	9.24	-11.58	7.11
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.48	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.69	-10.35	6.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.08	7.70	HS 81.65	147.0
HS20	6.80	12.84	HS 136.08	245.0
2F1	10.98	20.88	0.00	164.7
3F1	8.47	17.48	0.00	194.8
4F1	8.48	20.44	0.00	228.9
5C1	8.49	13.66	0.00	339.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	172.8	-156.7	172.8	-156.7	152.7	-176.9	152.7	-
OPER 294.8	274.6	-274.6	274.6	-274.6	254.5	-294.8	254.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00	
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00
OPER	HS20	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00	
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00
OPER	2F1	66.35 L	51.04	55.00	0.0	0.00	0.00	0.00	
		-19.76 R	-15.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.94 L	65.34	55.00	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.13 L	70.10	51.00	0.0	0.00	0.00	0.00	
		-30.81 R	-23.70	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.03 L	64.64	53.00	0.0	0.00	0.00	0.00	
		-33.94 R	-26.11	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.84	1.57	5.84	HS 31.48	56.7
HS20	2.62	9.73	2.62	9.73	HS 52.46	94.4
2F1	3.84	14.92	3.84	14.92	0.00	57.5
3F1	3.00	10.37	3.00	10.37	0.00	68.9
4F1	2.79	9.57	2.79	9.57	0.00	75.4

5C1	3.03	8.68	3.03	8.69	0.00	121.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 3.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.6	-165.6	151.3	-187.9
OPER	301.2C	-264.1	264.1	-301.2C	289.3	-276.0	252.2	-313.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50			
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00		
OPER	HS20	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50			
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00		
OPER	2F1	56.52 L	43.48	57.50	0.0	0.00	0.00	0.00			
		-24.84 R	-19.11	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.83 L	55.25	53.50	0.0	0.00	0.00	0.00			
		-35.75 R	-27.50	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.78 L	56.76	53.50	0.0	0.00	0.00	0.00			
		-38.74 R	-29.80	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.46 R	55.74	114.50	0.0	0.00	0.00	0.00			
		-36.47 R	-28.05	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.93	HS 34.97	63.0
HS20	3.34	7.24	2.91	8.22	HS 58.29	104.9
2F1	5.12	11.11	4.46	12.60	0.00	66.9
3F1	4.03	7.72	3.51	8.76	0.00	80.7
4F1	3.92	7.12	3.42	8.08	0.00	92.3
5C1	3.99	7.57	3.48	8.59	0.00	139.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.4
OPER	151.4	-112.1	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.56	4.42	-15.82	3.40	-18.04	6.67	-13.88	5.13
OPER	HS20	-20.56	4.42	-15.82	3.40	-18.04	6.67	-13.88	5.13
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.14	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.08	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.86	HS 65.42	117.8
HS20	5.45	18.10	HS 109.04	196.3
2F1	8.72	33.45	0.00	130.8
3F1	6.55	30.74	0.00	150.7
4F1	6.41	38.41	0.00	173.0
5C1	6.80	18.28	0.00	271.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.9	169.5	-160.0	169.6	-160.0	157.6	-171.9	157.6	-
OPER 286.6	274.6	-274.6	274.6	-274.6	262.7	-286.6	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50	
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00
OPER	HS20	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50	
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00
OPER	2F1	56.52 L	43.48	57.50	0.0	0.00	0.00	0.00	
		-24.84 R	-19.11	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.83 L	55.25	53.50	0.0	0.00	0.00	0.00	
		-35.75 R	-27.50	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.78 L	56.76	53.50	0.0	0.00	0.00	0.00	
		-38.74 R	-29.80	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.46 R	55.74	114.50	0.0	0.00	0.00	0.00	
		-36.47 R	-28.05	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	4.51	1.82	4.51	HS 36.44	65.6
HS20	3.04	7.52	3.04	7.52	HS 60.73	109.3
2F1	4.65	11.53	4.65	11.53	0.00	69.7
3F1	3.66	8.02	3.66	8.02	0.00	84.1
4F1	3.56	7.40	3.56	7.40	0.00	96.1

5C1	3.62	7.86	3.63	7.86	0.00	145.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 3.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00			
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00	135.00		
OPER	HS20	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00			
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00	135.00		
OPER	2F1	38.42 L	29.55	60.00	0.0	0.00	0.00	0.00			
		-29.93 R	-23.02	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.87 L	36.06	56.00	0.0	0.00	0.00	0.00			
		-43.06 R	-33.13	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.18 L	33.21	56.00	0.0	0.00	0.00	0.00			
		-46.66 R	-35.89	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.50 R	41.92	117.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.43	2.68	3.92	HS 53.56	96.4
HS20	5.09	5.72	4.46	6.53	HS 89.27	160.7
2F1	7.88	8.77	6.91	10.02	0.00	103.7
3F1	6.46	6.10	5.66	6.96	0.00	130.3
4F1	7.01	5.63	6.15	6.42	0.00	152.0
5C1	5.55	6.50	4.87	7.41	0.00	194.9

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.7
OPER	151.4	-110.0	122.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.95	-19.54	2.27	-20.99	4.40	-16.14	3.38
OPER	HS20	-25.40	2.95	-19.54	2.27	-20.99	4.40	-16.14	3.38
OPER	2F1	-15.25	2.02	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.14	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.76	HS 52.00	93.6
HS20	4.33	27.94	HS 86.67	156.0
2F1	7.22	60.69	0.00	108.3
3F1	5.30	42.18	0.00	121.9
4F1	5.16	39.07	0.00	139.5
5C1	5.59	25.83	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00	
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00	135.00
OPER	HS20	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00	
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00	135.00
OPER	2F1	38.42 L	29.55	60.00	0.0	0.00	0.00	0.00	
		-29.93 R	-23.02	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.87 L	36.06	56.00	0.0	0.00	0.00	0.00	
		-43.06 R	-33.13	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.18 L	33.21	56.00	0.0	0.00	0.00	0.00	
		-46.66 R	-35.89	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.50 R	41.92	117.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.57	2.79	3.57	HS 55.69	100.2
HS20	4.64	5.95	4.64	5.95	HS 92.82	167.1
2F1	7.19	9.13	7.19	9.13	0.00	107.8
3F1	5.89	6.34	5.89	6.34	0.00	135.5
4F1	6.39	5.86	6.39	5.86	0.00	158.1

5C1

5.07

6.76

5.07

6.76

0.00

202.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.7	-146.5	170.4	-168.7
OPER	301.2C	-264.1	264.1	-301.2C	321.2	-244.1	284.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50			
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50		
OPER	HS20	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50			
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50		
OPER	2F1	13.52 L	10.40	62.50	0.0	0.00	0.00	0.00			
		-35.01 R	-26.93	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.55 R	10.43	120.00	0.0	0.00	0.00	0.00			
		-50.38 R	-38.75	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.48 R	11.14	124.00	0.0	0.00	0.00	0.00			
		-54.59 R	-41.99	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.29 R	21.76	119.50	0.0	0.00	0.00	0.00			
		-47.00 R	-36.15	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.67	2.48	6.78	2.85	HS 49.51	89.1
HS20	12.78	4.13	11.30	4.75	HS 82.52	148.5
2F1	23.76	6.97	21.01	8.03	0.00	104.6
3F1	23.69	4.84	20.96	5.58	0.00	111.4
4F1	22.18	4.47	19.62	5.15	0.00	120.7
5C1	11.35	5.19	10.04	5.98	0.00	207.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.9
OPER	151.4	-108.0	124.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.09	-23.17	2.37	-23.80	3.15	-18.31	2.42
OPER	HS20	-30.11	3.09	-23.17	2.37	-23.80	3.15	-18.31	2.42
OPER	2F1	-17.48	2.02	-13.44	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.79	HS 43.03	77.5
HS20	3.59	39.65	HS 71.72	129.1
2F1	6.18	61.71	0.00	92.7
3F1	4.45	42.89	0.00	102.4
4F1	4.29	39.58	0.00	115.9
5C1	4.72	39.46	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.8	156.8	-172.8	156.8	-172.8	176.8	-152.8	176.8	-
OPER 254.7	274.6	-274.6	274.6	-274.6	294.6	-254.7	294.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50	
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50
OPER	HS20	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50	
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50
OPER	2F1	13.52 L	10.40	62.50	0.0	0.00	0.00	0.00	
		-35.01 R	-26.93	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.55 R	10.43	120.00	0.0	0.00	0.00	0.00	
		-50.38 R	-38.75	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.48 R	11.14	124.00	0.0	0.00	0.00	0.00	
		-54.59 R	-41.99	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.29 R	21.76	119.50	0.0	0.00	0.00	0.00	
		-47.00 R	-36.15	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.03	2.58	7.03	2.58	HS 51.66	93.0
HS20	11.72	4.30	11.72	4.30	HS 86.09	155.0
2F1	21.79	7.27	21.79	7.27	0.00	109.1
3F1	21.74	5.05	21.74	5.05	0.00	116.3
4F1	20.35	4.66	20.35	4.66	0.00	126.0

5C1	10.41	5.42	10.41	5.42	0.00	216.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.7	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.8	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	2F1	10.79 R	8.30	117.50	0.0	0.00	0.00	0.00			
		-40.10 R	-30.84	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.52 R	11.94	120.00	0.0	0.00	0.00	0.00			
		-63.35 L	-48.73	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.82 R	12.94	123.00	0.0	0.00	0.00	0.00			
		-74.97 L	-57.67	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00			
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.51	1.34	11.16	1.57	HS 26.81	48.3
HS20	20.85	2.23	18.60	2.61	HS 44.68	80.4
2F1	31.97	5.50	28.53	6.42	0.00	82.4
3F1	22.22	3.48	19.83	4.07	0.00	80.0
4F1	20.50	2.94	18.30	3.43	0.00	79.4
5C1	26.80	3.70	23.92	4.32	0.00	148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-105.9	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.17	26.56	-23.80	26.36	-18.31	20.27
OPER	HS20	-30.11	34.53	-23.17	26.56	-23.80	26.36	-18.31	20.27
OPER	2F1	-17.48	19.45	-13.44	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	29.05	-19.35	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	25.97	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
HS20	3.07	3.07	HS 61.35	110.4
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00 65.00
OPER	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00 65.00
OPER	2F1	10.79 R	8.30	117.50	0.0	0.00	0.00	0.00
		-40.10 R	-30.84	92.50	0.0	0.00	0.00	0.00 0.00
OPER	3F1	15.52 R	11.94	120.00	0.0	0.00	0.00	0.00
		-63.35 L	-48.73	70.00	0.0	0.00	0.00	0.00 0.00
OPER	4F1	16.82 R	12.94	123.00	0.0	0.00	0.00	0.00
		-74.97 L	-57.67	70.00	0.0	0.00	0.00	0.00 0.00
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.55	1.40	HS 28.09	50.6
HS20	19.24	2.34	19.24	2.34	HS 46.82	84.3
2F1	29.50	5.76	29.51	5.76	0.00	86.4
3F1	20.51	3.65	20.51	3.65	0.00	83.9
4F1	18.92	3.08	18.92	3.08	0.00	83.2

5C1	24.74	3.88	24.74	3.88	0.00	155.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.7	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.8	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	2F1	10.79 R	8.30	117.50	0.0	0.00	0.00	0.00			
		-40.10 R	-30.84	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.52 R	11.94	120.00	0.0	0.00	0.00	0.00			
		-63.35 L	-48.73	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.82 R	12.94	123.00	0.0	0.00	0.00	0.00			
		-74.97 L	-57.67	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00			
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.51	1.34	11.16	1.57	HS 26.81	48.3
HS20	20.85	2.23	18.60	2.61	HS 44.68	80.4
2F1	31.97	5.50	28.53	6.42	0.00	82.4
3F1	22.22	3.48	19.83	4.07	0.00	80.0
4F1	20.50	2.94	18.30	3.43	0.00	79.4
5C1	26.80	3.70	23.92	4.32	0.00	148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.7	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-105.9	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.37	26.36	-20.28	20.27
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.37	26.36	-20.28	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.04	29.05	-22.34	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.97	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
HS20	3.07	3.07	HS 61.35	110.4
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00	
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00
OPER	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00	
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00
OPER	2F1	10.79 R	8.30	117.50	0.0	0.00	0.00	0.00	
		-40.10 R	-30.84	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.52 R	11.94	120.00	0.0	0.00	0.00	0.00	
		-63.35 L	-48.73	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.82 R	12.94	123.00	0.0	0.00	0.00	0.00	
		-74.97 L	-57.67	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00	
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.55	1.40	HS 28.09	50.6
HS20	19.24	2.34	19.24	2.34	HS 46.82	84.3
2F1	29.50	5.76	29.51	5.76	0.00	86.4
3F1	20.51	3.65	20.51	3.65	0.00	83.9
4F1	18.92	3.08	18.92	3.08	0.00	83.2

5C1	24.74	3.88	24.74	3.88	0.00	155.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.9	-146.3	170.6	-168.6
OPER	301.2C	-264.1	264.1	-301.2C	321.5	-243.8	284.3	-280.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50			
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50		
OPER	HS20	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50			
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50		
OPER	2F1	13.37 R	10.28	87.50	0.0	0.00	0.00	0.00			
		-34.83 L	-26.80	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.42 L	10.32	30.00	0.0	0.00	0.00	0.00			
		-50.11 L	-38.55	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.33 L	11.03	26.00	0.0	0.00	0.00	0.00			
		-54.28 L	-41.75	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.04 L	21.57	30.50	0.0	0.00	0.00	0.00			
		-46.72 L	-35.94	50.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.60	2.48	6.72	2.86	HS 49.63	89.3
HS20	12.66	4.14	11.20	4.77	HS 82.72	148.9
2F1	24.05	7.00	21.27	8.06	0.00	105.0
3F1	23.96	4.86	21.19	5.61	0.00	111.9
4F1	22.43	4.49	19.84	5.18	0.00	121.3
5C1	11.46	5.22	10.14	6.01	0.00	208.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

4.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.9	64.9
OPER	151.4	-124.8	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.21	23.79	-2.47	18.30
OPER	HS20	-2.99	30.12	-2.30	23.17	-3.21	23.79	-2.47	18.30
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.26	-2.25	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.16	-2.43	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	22.91	-2.44	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.34	2.15	HS 43.07	77.5
HS20	38.90	3.59	HS 71.78	129.2
2F1	61.35	6.18	0.00	92.8
3F1	42.64	4.45	0.00	102.5
4F1	39.49	4.30	0.00	116.0
5C1	39.26	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.6	156.7	-172.9	156.7	-172.9	176.9	-152.6	176.9	-
OPER 254.4	274.6	-274.6	274.6	-274.6	294.9	-254.4	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50	
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50
OPER	HS20	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50	
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50
OPER	2F1	13.37 R	10.28	87.50	0.0	0.00	0.00	0.00	
		-34.83 L	-26.80	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.42 L	10.32	30.00	0.0	0.00	0.00	0.00	
		-50.11 L	-38.55	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.33 L	11.03	26.00	0.0	0.00	0.00	0.00	
		-54.28 L	-41.75	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.04 L	21.57	30.50	0.0	0.00	0.00	0.00	
		-46.72 L	-35.94	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.97	2.59	6.97	2.59	HS 51.78	93.2
HS20	11.61	4.32	11.61	4.32	HS 86.30	155.3
2F1	22.06	7.30	22.06	7.30	0.00	109.5
3F1	21.98	5.08	21.98	5.08	0.00	116.7
4F1	20.57	4.69	20.57	4.69	0.00	126.5

5C1	10.52	5.45	10.52	5.45	0.00	217.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.9	-157.2	159.7	-179.5
OPER	301.2C	-264.1	264.1	-301.2C	303.2	-262.1	266.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00			
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00	15.00		
OPER	HS20	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00			
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00	15.00		
OPER	2F1	38.26 R	29.43	90.00	0.0	0.00	0.00	0.00			
		-29.77 L	-22.90	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.63 R	35.87	94.00	0.0	0.00	0.00	0.00			
		-42.83 L	-32.95	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.96 R	33.04	94.00	0.0	0.00	0.00	0.00			
		-46.39 L	-35.68	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.23 L	41.72	33.00	0.0	0.00	0.00	0.00			
		-40.18 L	-30.91	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.07	3.44	2.69	3.93	HS 53.90	97.0
HS20	5.12	5.74	4.49	6.55	HS 89.83	161.7
2F1	7.93	8.80	6.95	10.05	0.00	104.3
3F1	6.50	6.12	5.71	6.99	0.00	131.2
4F1	7.06	5.65	6.19	6.45	0.00	152.5
5C1	5.59	6.52	4.91	7.45	0.00	196.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.7	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.44	20.98	-3.42	16.14
OPER	HS20	-2.99	25.40	-2.30	19.54	-4.44	20.98	-3.42	16.14
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.76	-2.25	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.31	-2.43	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.77	19.70	-3.67	15.16	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.58	2.60	HS 52.04	93.7
HS20	27.63	4.34	HS 86.74	156.1
2F1	60.33	7.22	0.00	108.3
3F1	41.93	5.30	0.00	122.0
4F1	38.84	5.17	0.00	139.6
5C1	25.74	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.6	164.0	-165.6	164.0	-165.6	166.0	-163.6	166.0	-
OPER 272.6	274.6	-274.6	274.6	-274.6	276.6	-272.6	276.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00	
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00	15.00
OPER	HS20	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00	
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00	15.00
OPER	2F1	38.26 R	29.43	90.00	0.0	0.00	0.00	0.00	
		-29.77 L	-22.90	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.63 R	35.87	94.00	0.0	0.00	0.00	0.00	
		-42.83 L	-32.95	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.96 R	33.04	94.00	0.0	0.00	0.00	0.00	
		-46.39 L	-35.68	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.23 L	41.72	33.00	0.0	0.00	0.00	0.00	
		-40.18 L	-30.91	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.80	3.58	2.80	3.58	HS 56.03	100.9
HS20	4.67	5.97	4.67	5.97	HS 93.39	168.1
2F1	7.23	9.16	7.23	9.16	0.00	108.5
3F1	5.93	6.36	5.93	6.36	0.00	136.5
4F1	6.44	5.88	6.44	5.88	0.00	158.7

5C1

5.10

6.78

5.10

6.78

0.00

204.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	174.1	-165.1	151.8	-187.4
OPER	301.2C	-264.1	264.1	-301.2C	290.1	-275.1	253.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50			
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00		
OPER	HS20	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50			
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00		
OPER	2F1	56.36 R	43.35	92.50	0.0	0.00	0.00	0.00			
		-24.71 L	-19.01	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.55 R	55.04	96.50	0.0	0.00	0.00	0.00			
		-35.55 L	-27.34	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.52 R	56.55	96.50	0.0	0.00	0.00	0.00			
		-38.50 L	-29.61	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.17 L	55.52	35.50	0.0	0.00	0.00	0.00			
		-36.26 L	-27.90	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.02	4.35	1.76	4.94	HS 35.19	63.3
HS20	3.36	7.26	2.93	8.24	HS 58.64	105.6
2F1	5.15	11.14	4.49	12.64	0.00	67.3
3F1	4.05	7.74	3.54	8.78	0.00	81.3
4F1	3.95	7.15	3.44	8.11	0.00	92.9
5C1	4.02	7.59	3.51	8.61	0.00	140.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.3
OPER	151.4	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.71	18.03	-5.16	13.87
OPER	HS20	-4.41	20.57	-3.39	15.82	-6.71	18.03	-5.16	13.87
OPER	2F1	-3.61	12.86	-2.77	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.51	-2.43	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.62	16.50	-5.09	12.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	3.27	HS 65.47	117.8
HS20	17.97	5.46	HS 109.11	196.4
2F1	33.44	8.73	0.00	130.9
3F1	30.73	6.55	0.00	150.7
4F1	38.19	6.41	0.00	173.1
5C1	18.22	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.4	169.2	-160.4	169.2	-160.4	158.1	-171.4	158.1	-
OPER 285.7	274.6	-274.6	274.6	-274.6	263.6	-285.7	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50	
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00
OPER	HS20	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50	
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00
OPER	2F1	56.36 R	43.35	92.50	0.0	0.00	0.00	0.00	
		-24.71 L	-19.01	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.55 R	55.04	96.50	0.0	0.00	0.00	0.00	
		-35.55 L	-27.34	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.52 R	56.55	96.50	0.0	0.00	0.00	0.00	
		-38.50 L	-29.61	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.17 L	55.52	35.50	0.0	0.00	0.00	0.00	
		-36.26 L	-27.90	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.65	66.0
HS20	3.06	7.54	3.06	7.54	HS 61.09	110.0
2F1	4.68	11.56	4.68	11.56	0.00	70.2
3F1	3.68	8.04	3.68	8.04	0.00	84.7
4F1	3.59	7.42	3.59	7.42	0.00	96.8

5C1	3.65	7.88	3.65	7.88	0.00	146.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.89	8.24	8.24	0.62	1.78
			9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.3	-169.8	147.1	-192.1
OPER	301.2C	-264.1	264.1	-301.2C	282.2	-283.1	245.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00			
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00		
OPER	HS20	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00			
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00		
OPER	2F1	66.18 R	50.91	95.00	0.0	0.00	0.00	0.00			
		-19.64 L	-15.11	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.72 R	65.17	95.00	0.0	0.00	0.00	0.00			
		-28.26 L	-21.74	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.85 R	69.88	99.00	0.0	0.00	0.00	0.00			
		-30.61 L	-23.55	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.80 R	64.46	97.00	0.0	0.00	0.00	0.00			
		-33.79 L	-25.99	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.75	5.63	1.52	6.37	HS 30.39	54.7
HS20	2.92	9.39	2.53	10.62	HS 50.65	91.2
2F1	4.26	14.41	3.70	16.30	0.00	55.6
3F1	3.33	10.02	2.89	11.33	0.00	66.5
4F1	3.11	9.25	2.70	10.46	0.00	72.8
5C1	3.37	8.38	2.92	9.48	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.4	-118.6	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.04	-7.14	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.04	-7.14	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.38	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.48	-4.47	10.37	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.66	4.09	HS 81.73	147.1
HS20	12.77	6.81	HS 136.22	245.2
2F1	20.87	10.99	0.00	164.8
3F1	17.47	8.47	0.00	194.9
4F1	20.42	8.48	0.00	229.0
5C1	13.61	8.49	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.2	172.4	-157.2	172.4	-157.2	153.4	-176.2	153.4	-
OPER 293.6	274.6	-274.6	274.6	-274.6	255.6	-293.6	255.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00	
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00
OPER	HS20	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00	
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00
OPER	2F1	66.18 R	50.91	95.00	0.0	0.00	0.00	0.00	
		-19.64 L	-15.11	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.72 R	65.17	95.00	0.0	0.00	0.00	0.00	
		-28.26 L	-21.74	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.85 R	69.88	99.00	0.0	0.00	0.00	0.00	
		-30.61 L	-23.55	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.80 R	64.46	97.00	0.0	0.00	0.00	0.00	
		-33.79 L	-25.99	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	5.84	1.59	5.84	HS 31.70	57.1
HS20	2.64	9.74	2.64	9.74	HS 52.83	95.1
2F1	3.86	14.95	3.86	14.95	0.00	57.9
3F1	3.02	10.39	3.02	10.39	0.00	69.4
4F1	2.81	9.59	2.81	9.59	0.00	76.0

5C1	3.05	8.69	3.05	8.69	0.00	122.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.438

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		27.64		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.5
 Superimposed Dead Load Moment 20.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.8	-166.8	123.6	-201.9
OPER	314.7C	-256.3	227.8	-314.7C	293.0	-278.0	206.1	-336.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.42	R	72.63	101.50	0.0	82.02	63.09	87.50		
		-22.44	R	-17.26	133.00	0.0	-22.81	-17.55	110.00	0.00	
OPER	HS20	94.42	R	72.63	101.50	0.0	82.02	63.09	87.50		
		-22.44	R	-17.26	133.00	0.0	-22.81	-17.55	110.00	0.00	
OPER	2F1	67.24	R	51.72	97.50	0.0	0.00	0.00	0.00		
		-14.63	R	-11.26	117.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	89.92	L	69.17	77.50	0.0	0.00	0.00	0.00		
		-21.05	R	-16.20	120.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	93.92	L	72.24	73.50	0.0	0.00	0.00	0.00		
		-22.81	R	-17.55	123.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	85.78	R	65.99	138.50	0.0	0.00	0.00	0.00		
		-32.72	R	-25.17	118.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	7.31	1.31	8.85	HS 26.19	47.1
HS20	3.10	12.19	2.18	14.75	HS 43.65	78.6
2F1	4.36	19.00	3.07	23.00	0.00	46.0
3F1	3.26	13.20	2.29	15.98	0.00	52.7
4F1	3.12	12.19	2.19	14.75	0.00	59.2
5C1	3.42	8.49	2.40	10.28	0.00	96.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.4	-116.5	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.08	12.11	-9.29	9.31
OPER	HS20	-13.13	13.13	-10.10	10.10	-12.08	12.11	-9.29	9.31
OPER	2F1	-7.97	7.98	-6.13	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.01	-7.69	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.37	191.5
HS20	8.88	8.86	HS 177.29	319.1
2F1	14.61	14.58	0.00	218.8
3F1	11.65	11.63	0.00	267.4
4F1	12.48	12.45	0.00	336.2
5C1	10.61	10.59	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.2	168.6	-151.2	150.9	-133.5	146.9	-173.0	129.1	-
OPER 258.7	266.5	-266.5	236.9	-236.9	244.8	-288.3	215.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.42 R	72.63	101.50	0.0	82.02	63.09	87.50	
		-22.44 R	-17.26	133.00	0.0	-22.81	-17.55	110.00	0.00
OPER	HS20	94.42 R	72.63	101.50	0.0	82.02	63.09	87.50	
		-22.44 R	-17.26	133.00	0.0	-22.81	-17.55	110.00	0.00
OPER	2F1	67.24 R	51.72	97.50	0.0	0.00	0.00	0.00	
		-14.63 R	-11.26	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.92 L	69.17	77.50	0.0	0.00	0.00	0.00	
		-21.05 R	-16.20	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.92 L	72.24	73.50	0.0	0.00	0.00	0.00	
		-22.81 R	-17.55	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.78 R	65.99	138.50	0.0	0.00	0.00	0.00	
		-32.72 R	-25.17	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.58	1.37	6.80	HS 27.35	49.2
HS20	2.59	12.64	2.28	11.34	HS 45.58	82.0
2F1	3.64	19.70	3.20	17.68	0.00	48.0
3F1	2.72	13.69	2.39	12.29	0.00	55.0
4F1	2.61	12.64	2.29	11.34	0.00	61.9

5C1	2.85	8.81	2.51	7.91	0.00	100.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.2	-169.9	146.9	-192.2
OPER	301.2C	-264.1	264.1	-301.2C	282.0	-283.2	244.9	-320.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	62.00	0.0	77.26	59.43	90.00			
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33	110.00	0.00		
OPER	HS20	96.81 L	74.47	62.00	0.0	77.26	59.43	90.00			
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33	110.00	0.00		
OPER	2F1	66.19 L	50.91	80.00	0.0	0.00	0.00	0.00			
		-19.72 R	-15.17	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.74 L	65.18	80.00	0.0	0.00	0.00	0.00			
		-28.37 R	-21.82	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.87 L	69.90	76.00	0.0	0.00	0.00	0.00			
		-30.74 R	-23.65	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.83 L	64.48	78.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.75	5.62	1.52	6.36	HS 30.36	54.6
HS20	2.91	9.37	2.53	10.60	HS 50.59	91.1
2F1	4.26	14.37	3.70	16.25	0.00	55.5
3F1	3.33	9.98	2.89	11.29	0.00	66.5
4F1	3.10	9.21	2.69	10.42	0.00	72.8
5C1	3.36	8.37	2.92	9.47	0.00	116.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.4	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.02	9.31	-11.55	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.02	9.31	-11.55	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.48	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.78	147.2
HS20	6.82	12.73	HS 136.31	245.4
2F1	11.00	20.84	0.00	165.0
3F1	8.48	17.45	0.00	195.1
4F1	8.49	20.41	0.00	229.2
5C1	8.50	13.61	0.00	340.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.3	172.4	-157.1	172.5	-157.1	153.3	-176.3	153.3	-
OPER 293.8	274.6	-274.6	274.6	-274.6	255.5	-293.8	255.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 L	74.47	62.00	0.0	77.26	59.43	90.00	
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33	110.00	0.00
OPER	HS20	96.81 L	74.47	62.00	0.0	77.26	59.43	90.00	
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33	110.00	0.00
OPER	2F1	66.19 L	50.91	80.00	0.0	0.00	0.00	0.00	
		-19.72 R	-15.17	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.74 L	65.18	80.00	0.0	0.00	0.00	0.00	
		-28.37 R	-21.82	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.87 L	69.90	76.00	0.0	0.00	0.00	0.00	
		-30.74 R	-23.65	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.83 L	64.48	78.00	0.0	0.00	0.00	0.00	
		-33.85 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.66	57.0
HS20	2.64	9.72	2.64	9.72	HS 52.77	95.0
2F1	3.86	14.90	3.86	14.90	0.00	57.9
3F1	3.02	10.36	3.02	10.36	0.00	69.3
4F1	2.81	9.56	2.81	9.56	0.00	75.9

5C1 3.05 8.68 3.05 8.68 0.00 121.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.89	8.24	8.24	0.62	1.78
			9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 4.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.9	-165.3	151.6	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.8	-275.5	252.6	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	64.50	0.0	65.08	50.06	92.50			
		-38.03 R	-29.26	133.00	0.0	-30.04	-23.11	110.00	0.00		
OPER	HS20	86.33 L	66.41	64.50	0.0	65.08	50.06	92.50			
		-38.03 R	-29.26	133.00	0.0	-30.04	-23.11	110.00	0.00		
OPER	2F1	56.38 L	43.37	82.50	0.0	0.00	0.00	0.00			
		-24.80 R	-19.08	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.59 L	55.07	78.50	0.0	0.00	0.00	0.00			
		-35.69 R	-27.45	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 L	56.58	78.50	0.0	0.00	0.00	0.00			
		-38.67 R	-29.74	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.24 R	55.57	139.50	0.0	0.00	0.00	0.00			
		-36.38 R	-27.98	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	2.01	4.35	1.76	4.93	HS 35.12	63.2
HS20	3.36	7.24	2.93	8.22	HS 58.53	105.3
2F1	5.14	11.11	4.48	12.61	0.00	67.2
3F1	4.05	7.72	3.53	8.76	0.00	81.2
4F1	3.94	7.12	3.43	8.09	0.00	92.7
5C1	4.01	7.57	3.50	8.59	0.00	139.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.3
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.00	6.74	-13.85	5.18
OPER	HS20	-20.57	4.42	-15.82	3.40	-18.00	6.74	-13.85	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.14	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.62	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.28	10.73	HS 65.53	118.0
HS20	5.46	17.89	HS 109.22	196.6
2F1	8.74	33.40	0.00	131.0
3F1	6.56	30.70	0.00	150.9
4F1	6.42	38.34	0.00	173.3
5C1	6.81	18.22	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.6	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.2	-286.1	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 L	66.41	64.50	0.0	65.08	50.06	92.50	
		-38.03 R	-29.26	133.00	0.0	-30.04	-23.11	110.00	0.00
OPER	HS20	86.33 L	66.41	64.50	0.0	65.08	50.06	92.50	
		-38.03 R	-29.26	133.00	0.0	-30.04	-23.11	110.00	0.00
OPER	2F1	56.38 L	43.37	82.50	0.0	0.00	0.00	0.00	
		-24.80 R	-19.08	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.59 L	55.07	78.50	0.0	0.00	0.00	0.00	
		-35.69 R	-27.45	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 L	56.58	78.50	0.0	0.00	0.00	0.00	
		-38.67 R	-29.74	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.24 R	55.57	139.50	0.0	0.00	0.00	0.00	
		-36.38 R	-27.98	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.51	1.83	4.51	HS 36.58	65.9
HS20	3.05	7.52	3.05	7.52	HS 60.97	109.8
2F1	4.67	11.53	4.67	11.53	0.00	70.0
3F1	3.68	8.02	3.68	8.02	0.00	84.6
4F1	3.58	7.40	3.58	7.40	0.00	96.6

5C1 3.64 7.86 3.64 7.86 0.00 145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00			
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00		
OPER	HS20	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00			
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00		
OPER	2F1	38.30 L	29.46	85.00	0.0	0.00	0.00	0.00			
		-29.89 R	-22.99	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.68 L	35.91	81.00	0.0	0.00	0.00	0.00			
		-43.00 R	-33.08	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.00 L	33.08	81.00	0.0	0.00	0.00	0.00			
		-46.59 R	-35.84	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.34 R	41.80	142.00	0.0	0.00	0.00	0.00			
		-40.35 R	-31.04	122.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.69	3.92	HS 53.73	96.7
HS20	5.10	5.73	4.48	6.54	HS 89.55	161.2
2F1	7.90	8.79	6.93	10.03	0.00	104.0
3F1	6.48	6.11	5.69	6.97	0.00	130.8
4F1	7.04	5.64	6.17	6.43	0.00	152.2
5C1	5.57	6.51	4.89	7.43	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.14	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.48	HS 52.09	93.8
HS20	4.34	27.47	HS 86.81	156.3
2F1	7.23	60.54	0.00	108.4
3F1	5.31	42.08	0.00	122.1
4F1	5.17	39.00	0.00	139.7
5C1	5.60	25.79	0.00	223.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00	
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00
OPER	HS20	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00	
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00
OPER	2F1	38.30 L	29.46	85.00	0.0	0.00	0.00	0.00	
		-29.89 R	-22.99	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.68 L	35.91	81.00	0.0	0.00	0.00	0.00	
		-43.00 R	-33.08	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.00 L	33.08	81.00	0.0	0.00	0.00	0.00	
		-46.59 R	-35.84	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.34 R	41.80	142.00	0.0	0.00	0.00	0.00	
		-40.35 R	-31.04	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.87	100.6
HS20	4.66	5.96	4.66	5.96	HS 93.11	167.6
2F1	7.21	9.14	7.21	9.14	0.00	108.1
3F1	5.91	6.35	5.91	6.35	0.00	136.0
4F1	6.42	5.86	6.42	5.86	0.00	158.3

5C1

5.08

6.77

5.08

6.77

0.00

203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.7	170.1	-169.0
OPER	301.2C	-264.1	264.1	-301.2C	320.7	-244.6	283.6	-281.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50			
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50		
OPER	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50			
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50		
OPER	2F1	13.40 L	10.31	87.50	0.0	0.00	0.00	0.00			
		-34.97 R	-26.90	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.54 R	10.41	145.00	0.0	0.00	0.00	0.00			
		-50.32 R	-38.71	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.46 R	11.12	149.00	0.0	0.00	0.00	0.00			
		-54.52 R	-41.94	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.18 R	21.68	144.50	0.0	0.00	0.00	0.00			
		-46.96 R	-36.12	124.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.60	2.48	6.72	2.86	HS 49.63	89.3
HS20	12.67	4.14	11.21	4.76	HS 82.71	148.9
2F1	23.93	6.99	21.16	8.06	0.00	104.9
3F1	23.69	4.86	20.95	5.60	0.00	111.8
4F1	22.18	4.49	19.61	5.17	0.00	121.1
5C1	11.38	5.21	10.06	6.00	0.00	208.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

4.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.6	-7.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.2	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.76	3.22	-18.28	2.47
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.76	3.22	-18.28	2.47
OPER	2F1	-17.48	2.03	-13.44	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.26	HS 43.10	77.6
HS20	3.59	38.77	HS 71.84	129.3
2F1	6.19	61.56	0.00	92.8
3F1	4.46	42.79	0.00	102.6
4F1	4.30	39.51	0.00	116.1
5C1	4.72	39.42	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.5	-153.1	176.5	-
OPER 255.1	274.6	-274.6	274.6	-274.6	294.1	-255.1	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50	
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50
OPER	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50	
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50
OPER	2F1	13.40 L	10.31	87.50	0.0	0.00	0.00	0.00	
		-34.97 R	-26.90	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.54 R	10.41	145.00	0.0	0.00	0.00	0.00	
		-50.32 R	-38.71	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.46 R	11.12	149.00	0.0	0.00	0.00	0.00	
		-54.52 R	-41.94	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.18 R	21.68	144.50	0.0	0.00	0.00	0.00	
		-46.96 R	-36.12	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.97	2.59	6.97	2.59	HS 51.77	93.2
HS20	11.62	4.31	11.62	4.31	HS 86.29	155.3
2F1	21.95	7.30	21.95	7.30	0.00	109.4
3F1	21.73	5.07	21.73	5.07	0.00	116.6
4F1	20.34	4.68	20.34	4.68	0.00	126.3

5C1	10.44	5.43	10.44	5.43	0.00	217.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00		
OPER	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00		
OPER	2F1	10.78 R	8.29	142.50	0.0	0.00	0.00	0.00			
		-40.05 R	-30.81	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.51 R	11.93	145.00	0.0	0.00	0.00	0.00			
		-63.33 L	-48.71	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.92	148.00	0.0	0.00	0.00	0.00			
		-74.93 L	-57.64	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00			
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.28	1.35	10.96	1.57	HS 26.90	48.4
HS20	20.47	2.24	18.26	2.62	HS 44.83	80.7
2F1	31.92	5.53	28.47	6.45	0.00	82.9
3F1	22.18	3.49	19.79	4.08	0.00	80.4
4F1	20.47	2.95	18.26	3.45	0.00	79.8
5C1	26.76	3.71	23.87	4.33	0.00	148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.7	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.76	26.35	-18.28	20.27
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.76	26.35	-18.28	20.27
OPER	2F1	-17.48	19.45	-13.44	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.86	66.4
HS20	3.07	3.07	HS 61.44	110.6
2F1	5.46	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	2F1	10.78 R	8.29	142.50	0.0	0.00	0.00	0.00	
		-40.05 R	-30.81	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.51 R	11.93	145.00	0.0	0.00	0.00	0.00	
		-63.33 L	-48.71	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.92	148.00	0.0	0.00	0.00	0.00	
		-74.93 L	-57.64	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
HS20	18.89	2.35	18.89	2.35	HS 46.97	84.5
2F1	29.45	5.79	29.45	5.79	0.00	86.8
3F1	20.47	3.66	20.47	3.66	0.00	84.2
4F1	18.89	3.10	18.89	3.10	0.00	83.6

5C1	24.69	3.89	24.69	3.89	0.00	155.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.89	8.24	8.24	0.62	1.78
			9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00		
OPER	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00		
OPER	2F1	10.78 R	8.29	142.50	0.0	0.00	0.00	0.00			
		-40.05 R	-30.81	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.51 R	11.93	145.00	0.0	0.00	0.00	0.00			
		-63.33 L	-48.71	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.92	148.00	0.0	0.00	0.00	0.00			
		-74.93 L	-57.64	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00			
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.28	1.35	10.96	1.57	HS 26.90	48.4
HS20	20.47	2.24	18.26	2.62	HS 44.83	80.7
2F1	31.92	5.53	28.47	6.45	0.00	82.9
3F1	22.18	3.49	19.79	4.08	0.00	80.4
4F1	20.47	2.95	18.26	3.45	0.00	79.8
5C1	26.76	3.71	23.87	4.33	0.00	148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.35	-20.26	20.27
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.35	-20.26	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.04	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.4
HS20	3.07	3.07	HS 61.44	110.6
2F1	5.46	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	2F1	10.78 R	8.29	142.50	0.0	0.00	0.00	0.00	
		-40.05 R	-30.81	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.51 R	11.93	145.00	0.0	0.00	0.00	0.00	
		-63.33 L	-48.71	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.92	148.00	0.0	0.00	0.00	0.00	
		-74.93 L	-57.64	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
HS20	18.89	2.35	18.89	2.35	HS 46.97	84.5
2F1	29.45	5.79	29.45	5.79	0.00	86.8
3F1	20.47	3.66	20.47	3.66	0.00	84.2
4F1	18.89	3.10	18.89	3.10	0.00	83.6

5C1	24.69	3.89	24.69	3.89	0.00	155.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.8	170.1	-169.1
OPER	301.2C	-264.1	264.1	-301.2C	320.6	-244.6	283.5	-281.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50			
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00		112.50	
OPER	HS20	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50			
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00		112.50	
OPER	2F1	13.40 R	10.30	112.50	0.0	0.00	0.00	0.00		0.00	
		-34.96 L	-26.89	82.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	13.48 L	10.37	55.00	0.0	0.00	0.00	0.00		0.00	
		-50.30 L	-38.69	80.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.39 L	11.07	51.00	0.0	0.00	0.00	0.00		0.00	
		-54.50 L	-41.93	77.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	28.14 L	21.65	55.50	0.0	0.00	0.00	0.00		0.00	
		-46.94 L	-36.11	75.50	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.48	2.48	6.61	2.86	HS 49.66	89.4
HS20	12.46	4.14	11.02	4.77	HS 82.76	149.0
2F1	23.94	7.00	21.16	8.06	0.00	105.0
3F1	23.78	4.86	21.03	5.60	0.00	111.9
4F1	22.27	4.49	19.70	5.17	0.00	121.2
5C1	11.39	5.21	10.07	6.00	0.00	208.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.23	23.78	-2.48	18.29
OPER	HS20	-2.99	30.12	-2.30	23.17	-3.23	23.78	-2.48	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.26	-2.25	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.16	-2.43	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	22.91	-2.44	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.20	2.15	HS 43.09	77.6
HS20	38.67	3.59	HS 71.81	129.3
2F1	61.34	6.19	0.00	92.8
3F1	42.63	4.46	0.00	102.5
4F1	39.49	4.30	0.00	116.1
5C1	39.26	4.72	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.4	-153.1	176.4	-
OPER 255.2	274.6	-274.6	274.6	-274.6	294.1	-255.2	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50	
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00	112.50
OPER	HS20	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50	
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00	112.50
OPER	2F1	13.40 R	10.30	112.50	0.0	0.00	0.00	0.00	
		-34.96 L	-26.89	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.48 L	10.37	55.00	0.0	0.00	0.00	0.00	
		-50.30 L	-38.69	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.39 L	11.07	51.00	0.0	0.00	0.00	0.00	
		-54.50 L	-41.93	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.14 L	21.65	55.50	0.0	0.00	0.00	0.00	
		-46.94 L	-36.11	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.59	6.86	2.59	HS 51.80	93.2
HS20	11.43	4.32	11.43	4.32	HS 86.33	155.4
2F1	21.95	7.30	21.95	7.30	0.00	109.5
3F1	21.81	5.07	21.81	5.07	0.00	116.7
4F1	20.43	4.68	20.43	4.68	0.00	126.4

5C1 10.45 5.44 10.45 5.44 0.00 217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.5	-157.6	159.2	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.7	265.4	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00			
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00		
OPER	HS20	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00			
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00		
OPER	2F1	38.29 R	29.46	115.00	0.0	0.00	0.00	0.00			
		-29.88 L	-22.98	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.68 R	35.91	119.00	0.0	0.00	0.00	0.00			
		-42.99 L	-33.07	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.00 R	33.08	119.00	0.0	0.00	0.00	0.00			
		-46.58 L	-35.83	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.31 L	41.78	58.00	0.0	0.00	0.00	0.00			
		-40.34 L	-31.03	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.68	3.93	HS 53.71	96.7
HS20	5.10	5.73	4.48	6.54	HS 89.52	161.1
2F1	7.90	8.79	6.93	10.04	0.00	104.0
3F1	6.48	6.11	5.69	6.98	0.00	130.8
4F1	7.03	5.64	6.17	6.44	0.00	152.3
5C1	5.57	6.51	4.89	7.43	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.46	20.97	-3.43	16.13
OPER	HS20	-2.99	25.40	-2.30	19.54	-4.46	20.97	-3.43	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.76	-2.25	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.31	-2.43	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.77	19.70	-3.67	15.15	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.07	93.7
HS20	27.49	4.34	HS 86.78	156.2
2F1	60.33	7.23	0.00	108.4
3F1	41.93	5.31	0.00	122.1
4F1	38.84	5.17	0.00	139.6
5C1	25.73	5.59	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 164.0	164.3	-165.3	164.3	-165.3	165.6	-164.0	165.6	-
OPER 273.3	274.6	-274.6	274.6	-274.6	276.0	-273.3	276.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00	
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00
OPER	HS20	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00	
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00
OPER	2F1	38.29 R	29.46	115.00	0.0	0.00	0.00	0.00	
		-29.88 L	-22.98	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.68 R	35.91	119.00	0.0	0.00	0.00	0.00	
		-42.99 L	-33.07	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.00 R	33.08	119.00	0.0	0.00	0.00	0.00	
		-46.58 L	-35.83	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.31 L	41.78	58.00	0.0	0.00	0.00	0.00	
		-40.34 L	-31.03	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.85	100.5
HS20	4.65	5.97	4.65	5.97	HS 93.08	167.5
2F1	7.21	9.15	7.21	9.15	0.00	108.1
3F1	5.91	6.36	5.91	6.36	0.00	136.0
4F1	6.42	5.87	6.42	5.87	0.00	158.4

5C1

5.08

6.78

5.08

6.78

0.00

203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 5.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.7	-165.4	151.5	-187.7
OPER	301.2C	-264.1	264.1	-301.2C	289.6	-275.7	252.4	-312.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	135.50	0.0	65.12	50.09	107.50			
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06	90.00	0.00		
OPER	HS20	86.33 R	66.41	135.50	0.0	65.12	50.09	107.50			
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06	90.00	0.00		
OPER	2F1	56.38 R	43.37	117.50	0.0	0.00	0.00	0.00			
		-24.80 L	-19.07	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.59 R	55.07	121.50	0.0	0.00	0.00	0.00			
		-35.68 L	-27.44	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 R	56.58	121.50	0.0	0.00	0.00	0.00			
		-38.66 L	-29.74	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.22 L	55.56	60.50	0.0	0.00	0.00	0.00			
		-36.38 L	-27.98	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.94	HS 35.09	63.2
HS20	3.35	7.25	2.92	8.23	HS 58.48	105.3
2F1	5.14	11.12	4.48	12.62	0.00	67.2
3F1	4.05	7.73	3.53	8.77	0.00	81.1
4F1	3.94	7.13	3.43	8.09	0.00	92.7
5C1	4.01	7.58	3.49	8.60	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.02	-5.18	13.86
OPER	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.02	-5.18	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.50	-2.43	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.62	16.50	-5.10	12.69	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.28	HS 65.50	117.9
HS20	17.90	5.46	HS 109.17	196.5
2F1	33.42	8.73	0.00	131.0
3F1	30.71	6.56	0.00	150.8
4F1	38.18	6.41	0.00	173.2
5C1	18.20	6.80	0.00	272.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.8	169.4	-160.1	169.4	-160.1	157.8	-171.8	157.8	-
OPER 286.3	274.6	-274.6	274.6	-274.6	263.0	-286.3	263.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 R	66.41	135.50	0.0	65.12	50.09	107.50	
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06	90.00	0.00
OPER	HS20	86.33 R	66.41	135.50	0.0	65.12	50.09	107.50	
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06	90.00	0.00
OPER	2F1	56.38 R	43.37	117.50	0.0	0.00	0.00	0.00	
		-24.80 L	-19.07	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.59 R	55.07	121.50	0.0	0.00	0.00	0.00	
		-35.68 L	-27.44	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 R	56.58	121.50	0.0	0.00	0.00	0.00	
		-38.66 L	-29.74	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.22 L	55.56	60.50	0.0	0.00	0.00	0.00	
		-36.38 L	-27.98	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.56	65.8
HS20	3.05	7.53	3.05	7.53	HS 60.93	109.7
2F1	4.66	11.55	4.66	11.55	0.00	70.0
3F1	3.67	8.02	3.67	8.02	0.00	84.5
4F1	3.58	7.41	3.58	7.41	0.00	96.5

5C1	3.64	7.87	3.64	7.87	0.00	145.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.4
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.5	244.6	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00			
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00	0.00		
OPER	HS20	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00			
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00	0.00		
OPER	2F1	66.20 R	50.92	120.00	0.0	0.00	0.00	0.00			
		-19.71 L	-15.17	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.75 R	65.19	120.00	0.0	0.00	0.00	0.00			
		-28.37 L	-21.82	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.88 R	69.91	124.00	0.0	0.00	0.00	0.00			
		-30.74 L	-23.64	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.84 R	64.49	122.00	0.0	0.00	0.00	0.00			
		-33.87 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.75	5.63	1.52	6.36	HS 30.33	54.6
HS20	2.91	9.38	2.53	10.60	HS 50.54	91.0
2F1	4.26	14.38	3.70	16.26	0.00	55.4
3F1	3.33	9.99	2.89	11.30	0.00	66.4
4F1	3.10	9.22	2.69	10.43	0.00	72.7
5C1	3.36	8.37	2.92	9.47	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

5.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-----------------	------------------------	---------------------

0.1

0.0

1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.4	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.03	-7.16	11.56
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.03	-7.16	11.56
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.80	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.76	147.2
HS20	12.73	6.81	HS 136.26	245.3
2F1	20.85	10.99	0.00	164.9
3F1	17.46	8.48	0.00	195.0
4F1	20.42	8.49	0.00	229.1
5C1	13.60	8.50	0.00	340.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.6	-157.0	153.1	-176.4	153.1	-
OPER 294.1	274.6	-274.6	274.6	-274.6	255.2	-294.1	255.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00
OPER	HS20	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00
OPER	2F1	66.20 R	50.92	120.00	0.0	0.00	0.00	0.00
		-19.71 L	-15.17	82.50	0.0	0.00	0.00	0.00
OPER	3F1	84.75 R	65.19	120.00	0.0	0.00	0.00	0.00
		-28.37 L	-21.82	80.00	0.0	0.00	0.00	0.00
OPER	4F1	90.88 R	69.91	124.00	0.0	0.00	0.00	0.00
		-30.74 L	-23.64	77.00	0.0	0.00	0.00	0.00
OPER	5C1	83.84 R	64.49	122.00	0.0	0.00	0.00	0.00
		-33.87 L	-26.05	80.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.84	1.58	5.84	HS 31.63	56.9
HS20	2.64	9.73	2.64	9.73	HS 52.72	94.9
2F1	3.86	14.92	3.86	14.92	0.00	57.8
3F1	3.01	10.37	3.01	10.37	0.00	69.3
4F1	2.81	9.57	2.81	9.57	0.00	75.8

5C1

3.04

8.68

3.04

8.68

0.00

121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.420

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		28.05		104.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.6	-167.0	123.5	-202.1
OPER	314.7C	-256.3	227.8	-314.7C	292.7	-278.3	205.8	-336.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50			
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00		
OPER	HS20	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50			
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00		
OPER	2F1	67.25 R	51.73	122.50	0.0	0.00	0.00	0.00			
		-14.64 R	-11.26	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.94 L	69.18	102.50	0.0	0.00	0.00	0.00			
		-21.06 R	-16.20	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.94 L	72.26	98.50	0.0	0.00	0.00	0.00			
		-22.82 R	-17.55	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.80 R	66.00	163.50	0.0	0.00	0.00	0.00			
		-32.77 R	-25.21	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.86	7.33	1.31	8.87	HS 26.15	47.1
HS20	3.10	12.22	2.18	14.79	HS 43.58	78.4
2F1	4.35	19.01	3.06	23.01	0.00	45.9
3F1	3.25	13.22	2.29	15.99	0.00	52.6
4F1	3.12	12.20	2.19	14.76	0.00	59.1
5C1	3.41	8.49	2.40	10.28	0.00	95.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.4	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.31	9.30
OPER	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.31	9.30
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.99	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.41	191.5
HS20	8.87	8.87	HS 177.35	319.2
2F1	14.60	14.59	0.00	218.9
3F1	11.64	11.64	0.00	267.6
4F1	12.47	12.46	0.00	336.5
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.4	168.7	-151.1	151.0	-133.3	146.7	-173.1	128.9	-
OPER 259.0	266.5	-266.5	236.9	-236.9	244.5	-288.6	214.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50	
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00
OPER	HS20	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50	
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00
OPER	2F1	67.25 R	51.73	122.50	0.0	0.00	0.00	0.00	
		-14.64 R	-11.26	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.94 L	69.18	102.50	0.0	0.00	0.00	0.00	
		-21.06 R	-16.20	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.94 L	72.26	98.50	0.0	0.00	0.00	0.00	
		-22.82 R	-17.55	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.80 R	66.00	163.50	0.0	0.00	0.00	0.00	
		-32.77 R	-25.21	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.60	1.37	6.82	HS 27.31	49.1
HS20	2.59	12.67	2.28	11.37	HS 45.51	81.9
2F1	3.63	19.72	3.19	17.69	0.00	47.9
3F1	2.72	13.70	2.39	12.30	0.00	55.0
4F1	2.60	12.65	2.29	11.35	0.00	61.8

5C1 2.85 8.81 2.50 7.90 0.00 100.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.3
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.4	244.7	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00			
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00		
OPER	HS20	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00			
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00		
OPER	2F1	66.20 L	50.92	105.00	0.0	0.00	0.00	0.00			
		-19.72 R	-15.17	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.75 L	65.19	105.00	0.0	0.00	0.00	0.00			
		-28.37 R	-21.83	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.88 L	69.91	101.00	0.0	0.00	0.00	0.00			
		-30.74 R	-23.65	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.84 L	64.49	103.00	0.0	0.00	0.00	0.00			
		-33.87 R	-26.06	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.75	5.62	1.52	6.36	HS 30.33	54.6
HS20	2.91	9.37	2.53	10.60	HS 50.56	91.0
2F1	4.26	14.37	3.70	16.26	0.00	55.4
3F1	3.33	9.99	2.89	11.30	0.00	66.4
4F1	3.10	9.22	2.69	10.43	0.00	72.7
5C1	3.36	8.37	2.92	9.46	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.30	-11.57	7.15
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.30	-11.57	7.15
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.65	HS 81.74	147.1
HS20	6.81	12.74	HS 136.23	245.2
2F1	10.99	20.86	0.00	164.9
3F1	8.48	17.46	0.00	195.0
4F1	8.48	20.42	0.00	229.1
5C1	8.50	13.61	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.5	-157.0	153.2	-176.4	153.2	-
OPER 294.0	274.6	-274.6	274.6	-274.6	255.3	-294.0	255.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00	
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00
OPER	HS20	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00	
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00
OPER	2F1	66.20 L	50.92	105.00	0.0	0.00	0.00	0.00	
		-19.72 R	-15.17	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.75 L	65.19	105.00	0.0	0.00	0.00	0.00	
		-28.37 R	-21.83	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.88 L	69.91	101.00	0.0	0.00	0.00	0.00	
		-30.74 R	-23.65	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.84 L	64.49	103.00	0.0	0.00	0.00	0.00	
		-33.87 R	-26.06	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.64	57.0
HS20	2.64	9.72	2.64	9.72	HS 52.74	94.9
2F1	3.86	14.91	3.86	14.91	0.00	57.8
3F1	3.01	10.36	3.01	10.36	0.00	69.3
4F1	2.81	9.56	2.81	9.56	0.00	75.8

5C1

3.05

8.68

3.05

8.68

0.00

121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.8	-165.3	151.5	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.7	-275.6	252.6	-312.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50			
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00		
OPER	HS20	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50			
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00		
OPER	2F1	56.39 L	43.37	107.50	0.0	0.00	0.00	0.00			
		-24.80 R	-19.08	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.60 L	55.07	103.50	0.0	0.00	0.00	0.00			
		-35.69 R	-27.45	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 L	56.59	103.50	0.0	0.00	0.00	0.00			
		-38.67 R	-29.75	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.24 R	55.57	164.50	0.0	0.00	0.00	0.00			
		-36.39 R	-27.99	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.93	HS 35.11	63.2
HS20	3.36	7.25	2.93	8.22	HS 58.51	105.3
2F1	5.14	11.11	4.48	12.61	0.00	67.2
3F1	4.05	7.72	3.53	8.76	0.00	81.1
4F1	3.94	7.13	3.43	8.09	0.00	92.7
5C1	4.01	7.57	3.50	8.59	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.4
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.73	-13.87	5.18
OPER	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.73	-13.87	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.16	-13.46	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.62	-12.69	5.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.75	HS 65.49	117.9
HS20	5.46	17.92	HS 109.15	196.5
2F1	8.73	33.42	0.00	131.0
3F1	6.56	30.72	0.00	150.8
4F1	6.41	38.20	0.00	173.1
5C1	6.80	18.21	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.7	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.1	-286.1	263.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50	
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00
OPER	HS20	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50	
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00
OPER	2F1	56.39 L	43.37	107.50	0.0	0.00	0.00	0.00	
		-24.80 R	-19.08	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.60 L	55.07	103.50	0.0	0.00	0.00	0.00	
		-35.69 R	-27.45	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 L	56.59	103.50	0.0	0.00	0.00	0.00	
		-38.67 R	-29.75	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.24 R	55.57	164.50	0.0	0.00	0.00	0.00	
		-36.39 R	-27.99	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.51	1.83	4.51	HS 36.57	65.8
HS20	3.05	7.52	3.05	7.52	HS 60.96	109.7
2F1	4.67	11.54	4.67	11.54	0.00	70.0
3F1	3.67	8.02	3.67	8.02	0.00	84.5
4F1	3.58	7.40	3.58	7.40	0.00	96.6

5C1 3.64 7.86 3.64 7.86 0.00 145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.5	159.4	-179.8
OPER	301.2C	-264.1	264.1	-301.2C	302.7	-262.6	265.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00			
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00		
OPER	HS20	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00			
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00		
OPER	2F1	38.30 L	29.46	110.00	0.0	0.00	0.00	0.00			
		-29.88 R	-22.99	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.68 L	35.91	106.00	0.0	0.00	0.00	0.00			
		-43.00 R	-33.08	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.00 L	33.08	106.00	0.0	0.00	0.00	0.00			
		-46.59 R	-35.84	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.34 R	41.80	167.00	0.0	0.00	0.00	0.00			
		-40.35 R	-31.03	147.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.69	3.92	HS 53.74	96.7
HS20	5.11	5.73	4.48	6.54	HS 89.57	161.2
2F1	7.90	8.79	6.93	10.03	0.00	104.0
3F1	6.48	6.11	5.69	6.97	0.00	130.9
4F1	7.04	5.64	6.18	6.43	0.00	152.1
5C1	5.57	6.51	4.89	7.43	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.45	-16.13	3.43
OPER	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.45	-16.13	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.92	-15.97	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.16	-16.39	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.52	HS 52.06	93.7
HS20	4.34	27.54	HS 86.76	156.2
2F1	7.23	60.36	0.00	108.4
3F1	5.31	41.95	0.00	122.1
4F1	5.17	38.85	0.00	139.6
5C1	5.59	25.74	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.7	-163.9	165.7	-
OPER 273.1	274.6	-274.6	274.6	-274.6	276.1	-273.1	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00	
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00
OPER	HS20	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00	
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00
OPER	2F1	38.30 L	29.46	110.00	0.0	0.00	0.00	0.00	
		-29.88 R	-22.99	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.68 L	35.91	106.00	0.0	0.00	0.00	0.00	
		-43.00 R	-33.08	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.00 L	33.08	106.00	0.0	0.00	0.00	0.00	
		-46.59 R	-35.84	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.34 R	41.80	167.00	0.0	0.00	0.00	0.00	
		-40.35 R	-31.03	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.88	100.6
HS20	4.66	5.96	4.66	5.96	HS 93.14	167.6
2F1	7.21	9.14	7.21	9.14	0.00	108.2
3F1	5.91	6.35	5.92	6.35	0.00	136.1
4F1	6.42	5.86	6.42	5.86	0.00	158.3

5C1

5.08

6.77

5.08

6.77

0.00

203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.5	-146.6	170.3	-168.9
OPER	301.2C	-264.1	264.1	-301.2C	320.9	-244.4	283.8	-281.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50			
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00	112.50		
OPER	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50			
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00	112.50		
OPER	2F1	13.40 L	10.31	112.50	0.0	0.00	0.00	0.00			
		-34.97 R	-26.90	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.53 R	10.41	170.00	0.0	0.00	0.00	0.00			
		-50.31 R	-38.70	145.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	14.46 R	11.12	174.00	0.0	0.00	0.00	0.00			
		-54.52 R	-41.94	148.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	28.18 R	21.68	169.50	0.0	0.00	0.00	0.00			
		-46.95 R	-36.12	149.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.62	2.48	6.74	2.86	HS 49.59	89.3
HS20	12.70	4.13	11.23	4.76	HS 82.65	148.8
2F1	23.95	6.99	21.18	8.05	0.00	104.8
3F1	23.71	4.86	20.97	5.59	0.00	111.7
4F1	22.20	4.48	19.63	5.16	0.00	121.0
5C1	11.39	5.20	10.07	5.99	0.00	208.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-7.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.22	-18.29	2.48
OPER	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.22	-18.29	2.48
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.92	-18.66	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.17	-19.35	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.26	HS 43.08	77.5
HS20	3.59	38.76	HS 71.80	129.2
2F1	6.19	61.37	0.00	92.8
3F1	4.46	42.65	0.00	102.5
4F1	4.30	39.36	0.00	116.1
5C1	4.72	39.27	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	156.9	-172.7	156.9	-172.7	176.6	-153.0	176.6	-
OPER 254.9	274.6	-274.6	274.6	-274.6	294.3	-254.9	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00
OPER	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00
OPER	2F1	13.40 L	10.31	112.50	0.0	0.00	0.00	0.00
		-34.97 R	-26.90	142.50	0.0	0.00	0.00	0.00
OPER	3F1	13.53 R	10.41	170.00	0.0	0.00	0.00	0.00
		-50.31 R	-38.70	145.00	0.0	0.00	0.00	0.00
OPER	4F1	14.46 R	11.12	174.00	0.0	0.00	0.00	0.00
		-54.52 R	-41.94	148.00	0.0	0.00	0.00	0.00
OPER	5C1	28.18 R	21.68	169.50	0.0	0.00	0.00	0.00
		-46.95 R	-36.12	149.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.99	2.59	6.99	2.59	HS 51.74	93.1
HS20	11.65	4.31	11.65	4.31	HS 86.23	155.2
2F1	21.97	7.29	21.97	7.29	0.00	109.4
3F1	21.75	5.07	21.75	5.07	0.00	116.5
4F1	20.36	4.68	20.36	4.68	0.00	126.3

5C1 10.44 5.43 10.44 5.43 0.00 217.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.5	-132.6	184.3	-154.9
OPER	301.2C	-264.1	264.1	-301.2C	344.2	-221.0	307.1	-258.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	2F1	10.77 L	8.29	82.50	0.0	0.00	0.00	0.00			
		-40.05 L	-30.81	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.50 L	11.92	80.00	0.0	0.00	0.00	0.00			
		-63.33 R	-48.71	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.80 L	12.92	77.00	0.0	0.00	0.00	0.00			
		-74.93 R	-57.64	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00			
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.34	11.01	1.57	HS 26.86	48.3
HS20	20.57	2.24	18.35	2.61	HS 44.76	80.6
2F1	31.96	5.52	28.51	6.45	0.00	82.8
3F1	22.21	3.49	19.81	4.08	0.00	80.3
4F1	20.50	2.95	18.29	3.44	0.00	79.6
5C1	26.78	3.71	23.89	4.33	0.00	148.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.90	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.3
HS20	3.07	3.07	HS 61.43	110.6
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.0	147.6	-182.0	147.6	-182.0	190.6	-139.0	190.6	-
OPER 231.6	274.6	-274.6	274.6	-274.6	317.7	-231.6	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	2F1	10.77 L	8.29	82.50	0.0	0.00	0.00	0.00	
		-40.05 L	-30.81	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.50 L	11.92	80.00	0.0	0.00	0.00	0.00	
		-63.33 R	-48.71	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.92	77.00	0.0	0.00	0.00	0.00	
		-74.93 R	-57.64	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00	
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.39	1.41	11.39	1.41	HS 28.14	50.7
HS20	18.98	2.35	18.98	2.35	HS 46.90	84.4
2F1	29.49	5.78	29.49	5.78	0.00	86.7
3F1	20.50	3.66	20.50	3.66	0.00	84.1
4F1	18.92	3.09	18.92	3.09	0.00	83.4

5C1	24.72	3.88	24.72	3.88	0.00	155.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.5	-132.6	184.3	-154.9
OPER	301.2C	-264.1	264.1	-301.2C	344.2	-221.0	307.1	-258.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	2F1	10.77 L	8.29	82.50	0.0	0.00	0.00	0.00			
		-40.05 L	-30.81	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.50 L	11.92	80.00	0.0	0.00	0.00	0.00			
		-63.33 R	-48.71	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.80 L	12.92	77.00	0.0	0.00	0.00	0.00			
		-74.93 R	-57.64	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00			
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.34	1.34	11.01	1.57	HS 26.86	48.3
HS20	20.57	2.24	18.35	2.61	HS 44.76	80.6
2F1	31.96	5.52	28.51	6.45	0.00	82.8
3F1	22.21	3.49	19.81	4.08	0.00	80.3
4F1	20.50	2.95	18.29	3.44	0.00	79.6
5C1	26.78	3.71	23.89	4.33	0.00	148.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.3
HS20	3.07	3.07	HS 61.43	110.6
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.0	147.6	-182.0	147.6	-182.0	190.6	-139.0	190.6	-
OPER 231.6	274.6	-274.6	274.6	-274.6	317.7	-231.6	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	2F1	10.77 L	8.29	82.50	0.0	0.00	0.00	0.00	
		-40.05 L	-30.81	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.50 L	11.92	80.00	0.0	0.00	0.00	0.00	
		-63.33 R	-48.71	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.92	77.00	0.0	0.00	0.00	0.00	
		-74.93 R	-57.64	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00	
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.39	1.41	11.39	1.41	HS 28.14	50.7
HS20	18.98	2.35	18.98	2.35	HS 46.90	84.4
2F1	29.49	5.78	29.49	5.78	0.00	86.7
3F1	20.50	3.66	20.50	3.66	0.00	84.1
4F1	18.92	3.09	18.92	3.09	0.00	83.4

5C1	24.72	3.88	24.72	3.88	0.00	155.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 6.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.5	-146.6	170.3	-168.9
OPER	301.2C	-264.1	264.1	-301.2C	320.9	-244.4	283.8	-281.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50			
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00	137.50		
OPER	HS20	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50			
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00	137.50		
OPER	2F1	13.40 R	10.31	137.50	0.0	0.00	0.00	0.00			
		-34.97 L	-26.90	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.53 L	10.41	80.00	0.0	0.00	0.00	0.00			
		-50.31 L	-38.70	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.46 L	11.12	76.00	0.0	0.00	0.00	0.00			
		-54.52 L	-41.94	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.18 L	21.68	80.50	0.0	0.00	0.00	0.00			
		-46.95 L	-36.12	100.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.49	2.48	6.63	2.86	HS 49.59	89.3
HS20	12.49	4.13	11.05	4.76	HS 82.65	148.8
2F1	23.95	6.99	21.18	8.05	0.00	104.8
3F1	23.71	4.86	20.97	5.59	0.00	111.7
4F1	22.20	4.48	19.63	5.16	0.00	121.0
5C1	11.39	5.20	10.07	5.99	0.00	208.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.22	23.78	-2.48	18.29
OPER	HS20	-2.99	30.12	-2.30	23.17	-3.22	23.78	-2.48	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	24.26	-2.25	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.16	-2.43	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	22.90	-2.44	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.26	2.15	HS 43.08	77.5
HS20	38.76	3.59	HS 71.80	129.2
2F1	61.37	6.19	0.00	92.8
3F1	42.65	4.46	0.00	102.5
4F1	39.51	4.30	0.00	116.1
5C1	39.27	4.72	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	156.9	-172.7	156.9	-172.7	176.6	-153.0	176.6	-
OPER 254.9	274.6	-274.6	274.6	-274.6	294.3	-254.9	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50	
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00	137.50
OPER	HS20	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50	
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00	137.50
OPER	2F1	13.40 R	10.31	137.50	0.0	0.00	0.00	0.00	
		-34.97 L	-26.90	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.53 L	10.41	80.00	0.0	0.00	0.00	0.00	
		-50.31 L	-38.70	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.46 L	11.12	76.00	0.0	0.00	0.00	0.00	
		-54.52 L	-41.94	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.18 L	21.68	80.50	0.0	0.00	0.00	0.00	
		-46.95 L	-36.12	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.87	2.59	6.87	2.59	HS 51.74	93.1
HS20	11.46	4.31	11.46	4.31	HS 86.23	155.2
2F1	21.97	7.29	21.97	7.29	0.00	109.4
3F1	21.75	5.07	21.75	5.07	0.00	116.5
4F1	20.36	4.68	20.36	4.68	0.00	126.3

5C1 10.44 5.43 10.44 5.43 0.00 217.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.5	159.4	-179.8
OPER	301.2C	-264.1	264.1	-301.2C	302.7	-262.6	265.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00			
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00	65.00		
OPER	HS20	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00			
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00	65.00		
OPER	2F1	38.30 R	29.46	140.00	0.0	0.00	0.00	0.00			
		-29.88 L	-22.99	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.68 R	35.91	144.00	0.0	0.00	0.00	0.00			
		-43.00 L	-33.08	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.00 R	33.08	144.00	0.0	0.00	0.00	0.00			
		-46.59 L	-35.84	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.34 L	41.80	83.00	0.0	0.00	0.00	0.00			
		-40.35 L	-31.03	103.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.69	3.92	HS 53.74	96.7
HS20	5.11	5.73	4.48	6.54	HS 89.57	161.2
2F1	7.90	8.79	6.93	10.03	0.00	104.0
3F1	6.48	6.11	5.69	6.97	0.00	130.9
4F1	7.04	5.64	6.18	6.43	0.00	152.1
5C1	5.57	6.51	4.89	7.43	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

6.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.7	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.45	20.97	-3.43	16.13
OPER	HS20	-2.99	25.40	-2.30	19.54	-4.45	20.97	-3.43	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	20.76	-2.25	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.31	-2.43	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.77	19.70	-3.67	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.52	2.60	HS 52.06	93.7
HS20	27.54	4.34	HS 86.76	156.2
2F1	60.36	7.23	0.00	108.4
3F1	41.95	5.31	0.00	122.1
4F1	38.85	5.17	0.00	139.6
5C1	25.74	5.59	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.7	-163.9	165.7	-
OPER 273.1	274.6	-274.6	274.6	-274.6	276.1	-273.1	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00
OPER	HS20	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00
OPER	2F1	38.30 R	29.46	140.00	0.0	0.00	0.00	0.00
		-29.88 L	-22.99	107.50	0.0	0.00	0.00	0.00
OPER	3F1	46.68 R	35.91	144.00	0.0	0.00	0.00	0.00
		-43.00 L	-33.08	105.00	0.0	0.00	0.00	0.00
OPER	4F1	43.00 R	33.08	144.00	0.0	0.00	0.00	0.00
		-46.59 L	-35.84	102.00	0.0	0.00	0.00	0.00
OPER	5C1	54.34 L	41.80	83.00	0.0	0.00	0.00	0.00
		-40.35 L	-31.03	103.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.88	100.6
HS20	4.66	5.96	4.66	5.96	HS 93.13	167.6
2F1	7.21	9.14	7.21	9.14	0.00	108.2
3F1	5.91	6.35	5.91	6.35	0.00	136.1
4F1	6.42	5.86	6.42	5.86	0.00	158.3

5C1

5.08

6.77

5.08

6.77

0.00

203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.8	-165.3	151.5	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.7	-275.6	252.6	-312.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	160.50	0.0	65.11	50.08	132.50			
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10	115.00	0.00		
OPER	HS20	86.33 R	66.41	160.50	0.0	65.11	50.08	132.50			
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10	115.00	0.00		
OPER	2F1	56.39 R	43.37	142.50	0.0	0.00	0.00	0.00			
		-24.80 L	-19.08	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.60 R	55.07	146.50	0.0	0.00	0.00	0.00			
		-35.69 L	-27.45	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 R	56.59	146.50	0.0	0.00	0.00	0.00			
		-38.67 L	-29.75	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.24 L	55.57	85.50	0.0	0.00	0.00	0.00			
		-36.39 L	-27.99	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.93	HS 35.11	63.2
HS20	3.36	7.25	2.93	8.22	HS 58.51	105.3
2F1	5.14	11.11	4.48	12.61	0.00	67.2
3F1	4.05	7.72	3.53	8.76	0.00	81.1
4F1	3.94	7.13	3.43	8.09	0.00	92.7
5C1	4.01	7.57	3.50	8.59	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.73	18.02	-5.18	13.87
OPER	HS20	-4.42	20.57	-3.40	15.82	-6.73	18.02	-5.18	13.87
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.50	-2.43	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.62	16.50	-5.10	12.69	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.75	3.28	HS 65.49	117.9
HS20	17.92	5.46	HS 109.15	196.5
2F1	33.42	8.73	0.00	131.0
3F1	30.72	6.56	0.00	150.8
4F1	38.20	6.41	0.00	173.1
5C1	18.21	6.80	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.7	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.1	-286.1	263.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 R	66.41	160.50	0.0	65.11	50.08	132.50	
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10	115.00	0.00
OPER	HS20	86.33 R	66.41	160.50	0.0	65.11	50.08	132.50	
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10	115.00	0.00
OPER	2F1	56.39 R	43.37	142.50	0.0	0.00	0.00	0.00	
		-24.80 L	-19.08	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.60 R	55.07	146.50	0.0	0.00	0.00	0.00	
		-35.69 L	-27.45	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 R	56.59	146.50	0.0	0.00	0.00	0.00	
		-38.67 L	-29.75	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.24 L	55.57	85.50	0.0	0.00	0.00	0.00	
		-36.39 L	-27.99	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.51	1.83	4.51	HS 36.57	65.8
HS20	3.05	7.52	3.05	7.52	HS 60.96	109.7
2F1	4.67	11.54	4.67	11.54	0.00	70.0
3F1	3.67	8.02	3.67	8.02	0.00	84.5
4F1	3.58	7.40	3.58	7.40	0.00	96.6

5C1	3.64	7.86	3.64	7.86	0.00	145.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.3
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.4	244.7	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00			
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00		
OPER	HS20	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00			
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00		
OPER	2F1	66.20 R	50.92	145.00	0.0	0.00	0.00	0.00			
		-19.72 L	-15.17	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.75 R	65.19	145.00	0.0	0.00	0.00	0.00			
		-28.37 L	-21.83	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.88 R	69.91	149.00	0.0	0.00	0.00	0.00			
		-30.74 L	-23.65	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.84 R	64.49	147.00	0.0	0.00	0.00	0.00			
		-33.87 L	-26.06	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.75	5.62	1.52	6.36	HS 30.33	54.6
HS20	2.91	9.37	2.53	10.60	HS 50.56	91.0
2F1	4.26	14.37	3.70	16.26	0.00	55.4
3F1	3.33	9.99	2.89	11.30	0.00	66.4
4F1	3.10	9.22	2.69	10.43	0.00	72.7
5C1	3.36	8.37	2.92	9.46	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

6.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.4	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.04	-7.15	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.04	-7.15	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.65	4.09	HS 81.74	147.1
HS20	12.74	6.81	HS 136.23	245.2
2F1	20.86	10.99	0.00	164.9
3F1	17.46	8.48	0.00	195.0
4F1	20.42	8.48	0.00	229.1
5C1	13.61	8.50	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 176.4	172.5	-157.0	172.5	-157.0	153.2	-176.4	153.2	-
OPER 294.0	274.6	-274.6	274.6	-274.6	255.3	-294.0	255.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00	
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00
OPER	HS20	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00	
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00
OPER	2F1	66.20 R	50.92	145.00	0.0	0.00	0.00	0.00	
		-19.72 L	-15.17	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.75 R	65.19	145.00	0.0	0.00	0.00	0.00	
		-28.37 L	-21.83	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.88 R	69.91	149.00	0.0	0.00	0.00	0.00	
		-30.74 L	-23.65	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.84 R	64.49	147.00	0.0	0.00	0.00	0.00	
		-33.87 L	-26.06	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.64	57.0
HS20	2.64	9.72	2.64	9.72	HS 52.74	94.9
2F1	3.86	14.91	3.86	14.91	0.00	57.8
3F1	3.01	10.36	3.01	10.36	0.00	69.3
4F1	2.81	9.56	2.81	9.56	0.00	75.8

5C1 3.05 8.68 3.05 8.68 0.00 121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.27	8.24	8.24	0.62	1.84
			10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.421

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		27.65		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.6	-167.0	123.5	-202.1
OPER	314.7C	-256.3	227.8	-314.7C	292.7	-278.3	205.8	-336.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.43	L	72.64	123.50	0.0	82.16	63.20	137.50		
		-22.45	L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00	
OPER	HS20	94.43	L	72.64	123.50	0.0	82.16	63.20	137.50		
		-22.45	L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00	
OPER	2F1	67.25	L	51.73	127.50	0.0	0.00	0.00	0.00		
		-14.64	L	-11.26	107.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	89.94	R	69.18	147.50	0.0	0.00	0.00	0.00		
		-21.06	L	-16.20	105.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	93.94	R	72.26	151.50	0.0	0.00	0.00	0.00		
		-22.82	L	-17.55	102.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	85.80	L	66.00	86.50	0.0	0.00	0.00	0.00		
		-32.77	L	-25.21	106.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.86	7.33	1.31	8.87	HS 26.15	47.1
HS20	3.10	12.22	2.18	14.79	HS 43.58	78.4
2F1	4.35	19.01	3.06	23.01	0.00	45.9
3F1	3.25	13.22	2.29	15.99	0.00	52.6
4F1	3.12	12.20	2.19	14.76	0.00	59.1
5C1	3.41	8.49	2.40	10.28	0.00	95.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

6.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.4	-116.5	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.30	9.31
OPER	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.30	9.31
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.99	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.39	191.5
HS20	8.87	8.86	HS 177.31	319.2
2F1	14.60	14.59	0.00	218.9
3F1	11.64	11.63	0.00	267.6
4F1	12.47	12.46	0.00	336.4
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.4	168.7	-151.1	151.0	-133.3	146.7	-173.1	128.9	-
OPER 259.0	266.5	-266.5	236.9	-236.9	244.5	-288.6	214.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.43 L	72.64	123.50	0.0	82.16	63.20	137.50	
		-22.45 L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00
OPER	HS20	94.43 L	72.64	123.50	0.0	82.16	63.20	137.50	
		-22.45 L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00
OPER	2F1	67.25 L	51.73	127.50	0.0	0.00	0.00	0.00	
		-14.64 L	-11.26	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.94 R	69.18	147.50	0.0	0.00	0.00	0.00	
		-21.06 L	-16.20	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.94 R	72.26	151.50	0.0	0.00	0.00	0.00	
		-22.82 L	-17.55	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.80 L	66.00	86.50	0.0	0.00	0.00	0.00	
		-32.77 L	-25.21	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.60	1.37	6.82	HS 27.31	49.1
HS20	2.59	12.67	2.28	11.37	HS 45.51	81.9
2F1	3.63	19.72	3.19	17.69	0.00	47.9
3F1	2.72	13.70	2.39	12.30	0.00	55.0
4F1	2.60	12.65	2.29	11.35	0.00	61.8

5C1	2.85	8.81	2.50	7.90	0.00	100.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.4
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.5	244.6	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00			
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00		
OPER	HS20	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00			
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00		
OPER	2F1	66.20 L	50.92	130.00	0.0	0.00	0.00	0.00			
		-19.71 R	-15.16	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.75 L	65.19	130.00	0.0	0.00	0.00	0.00			
		-28.37 R	-21.82	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.88 L	69.91	126.00	0.0	0.00	0.00	0.00			
		-30.74 R	-23.64	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.84 L	64.49	128.00	0.0	0.00	0.00	0.00			
		-33.87 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.75	5.63	1.52	6.36	HS 30.33	54.6
HS20	2.91	9.38	2.53	10.60	HS 50.54	91.0
2F1	4.26	14.38	3.70	16.26	0.00	55.4
3F1	3.33	9.99	2.89	11.30	0.00	66.4
4F1	3.10	9.22	2.69	10.43	0.00	72.7
5C1	3.36	8.37	2.92	9.47	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

6.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-----------------	------------------------	---------------------

-0.1	-1.9	0.0
------	------	-----

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.31	-11.56	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.31	-11.56	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.80	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.76	147.2
HS20	6.81	12.73	HS 136.26	245.3
2F1	10.99	20.85	0.00	164.9
3F1	8.48	17.46	0.00	195.0
4F1	8.49	20.42	0.00	229.1
5C1	8.50	13.60	0.00	340.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.6	-157.0	153.1	-176.4	153.1	-
OPER 294.1	274.6	-274.6	274.6	-274.6	255.2	-294.1	255.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00	
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00
OPER	HS20	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00	
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00
OPER	2F1	66.20 L	50.92	130.00	0.0	0.00	0.00	0.00	
		-19.71 R	-15.16	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.75 L	65.19	130.00	0.0	0.00	0.00	0.00	
		-28.37 R	-21.82	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.88 L	69.91	126.00	0.0	0.00	0.00	0.00	
		-30.74 R	-23.64	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.84 L	64.49	128.00	0.0	0.00	0.00	0.00	
		-33.87 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.84	1.58	5.84	HS 31.63	56.9
HS20	2.64	9.73	2.64	9.73	HS 52.72	94.9
2F1	3.86	14.92	3.86	14.92	0.00	57.8
3F1	3.01	10.37	3.01	10.37	0.00	69.3
4F1	2.81	9.57	2.81	9.57	0.00	75.8

5C1

3.04

8.68

3.04

8.68

0.00

121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.7	-165.4	151.5	-187.7
OPER	301.2C	-264.1	264.1	-301.2C	289.6	-275.7	252.4	-312.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50			
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00		
OPER	HS20	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50			
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00		
OPER	2F1	56.38 L	43.37	132.50	0.0	0.00	0.00	0.00			
		-24.80 R	-19.07	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.59 L	55.07	128.50	0.0	0.00	0.00	0.00			
		-35.68 R	-27.44	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 L	56.58	128.50	0.0	0.00	0.00	0.00			
		-38.66 R	-29.74	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.22 R	55.56	189.50	0.0	0.00	0.00	0.00			
		-36.38 R	-27.98	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.94	HS 35.09	63.2
HS20	3.35	7.25	2.92	8.23	HS 58.48	105.3
2F1	5.14	11.12	4.48	12.62	0.00	67.2
3F1	4.05	7.73	3.53	8.77	0.00	81.1
4F1	3.94	7.13	3.43	8.09	0.00	92.7
5C1	4.01	7.58	3.49	8.60	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

6.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.3
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.74	-13.86	5.18
OPER	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.74	-13.86	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.16	-13.47	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.62	-12.69	5.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.28	10.74	HS 65.50	117.9
HS20	5.46	17.90	HS 109.17	196.5
2F1	8.73	33.42	0.00	131.0
3F1	6.56	30.71	0.00	150.8
4F1	6.41	38.18	0.00	173.2
5C1	6.80	18.20	0.00	272.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.8	169.4	-160.1	169.4	-160.1	157.8	-171.8	157.8	-
OPER 286.3	274.6	-274.6	274.6	-274.6	263.0	-286.3	263.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50	
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00
OPER	HS20	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50	
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00
OPER	2F1	56.38 L	43.37	132.50	0.0	0.00	0.00	0.00	
		-24.80 R	-19.07	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.59 L	55.07	128.50	0.0	0.00	0.00	0.00	
		-35.68 R	-27.44	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 L	56.58	128.50	0.0	0.00	0.00	0.00	
		-38.66 R	-29.74	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.22 R	55.56	189.50	0.0	0.00	0.00	0.00	
		-36.38 R	-27.98	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.56	65.8
HS20	3.05	7.53	3.05	7.53	HS 60.93	109.7
2F1	4.66	11.55	4.66	11.55	0.00	70.0
3F1	3.67	8.02	3.67	8.02	0.00	84.5
4F1	3.58	7.41	3.58	7.41	0.00	96.5

5C1 3.64 7.87 3.64 7.87 0.00 145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 6.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	180.7C	-158.4	158.4	-180.7C	181.5	-157.6	159.2	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.7	265.4	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.61	117.00	0.0	45.24	34.80	145.00			
		-45.82 R	-35.25	183.00	0.0	-35.45	-27.27	160.00		210.00	
OPER	HS20	59.30 L	45.61	117.00	0.0	45.24	34.80	145.00			
		-45.82 R	-35.25	183.00	0.0	-35.45	-27.27	160.00		210.00	
OPER	2F1	38.29 L	29.46	135.00	0.0	0.00	0.00	0.00		0.00	
		-29.88 R	-22.98	167.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	46.68 L	35.91	131.00	0.0	0.00	0.00	0.00		0.00	
		-42.99 R	-33.07	170.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	43.00 L	33.08	131.00	0.0	0.00	0.00	0.00		0.00	
		-46.58 R	-35.83	173.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	54.31 R	41.78	192.00	0.0	0.00	0.00	0.00		0.00	
		-40.33 R	-31.03	172.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.69	3.93	HS 53.71	96.7
HS20	5.10	5.73	4.48	6.54	HS 89.52	161.1
2F1	7.90	8.79	6.93	10.04	0.00	104.0
3F1	6.48	6.11	5.69	6.98	0.00	130.8
4F1	7.03	5.64	6.17	6.44	0.00	152.3
5C1	5.57	6.51	4.89	7.43	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.46	-16.13	3.43
OPER	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.46	-16.13	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.93	-15.97	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.16	-16.39	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.49	HS 52.07	93.7
HS20	4.34	27.49	HS 86.78	156.2
2F1	7.23	60.33	0.00	108.4
3F1	5.31	41.93	0.00	122.1
4F1	5.17	38.84	0.00	139.6
5C1	5.59	25.73	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 164.0	164.2	-165.3	164.3	-165.3	165.6	-164.0	165.6	-
OPER 273.3	274.6	-274.6	274.6	-274.6	276.0	-273.3	276.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	59.30 L	45.61 R	117.00	0.0	45.24	34.80	145.00	
		-45.82 R	-35.25 L	183.00	0.0	-35.45	-27.27	160.00	210.00
OPER	HS20	59.30 L	45.61 R	117.00	0.0	45.24	34.80	145.00	
		-45.82 R	-35.25 L	183.00	0.0	-35.45	-27.27	160.00	210.00
OPER	2F1	38.29 L	29.46 R	135.00	0.0	0.00	0.00	0.00	
		-29.88 R	-22.98 L	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.68 L	35.91 R	131.00	0.0	0.00	0.00	0.00	
		-42.99 R	-33.07 L	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.00 L	33.08 R	131.00	0.0	0.00	0.00	0.00	
		-46.58 R	-35.83 L	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.31 L	41.78 R	192.00	0.0	0.00	0.00	0.00	
		-40.33 R	-31.03 L	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.85	100.5
HS20	4.65	5.97	4.65	5.97	HS 93.08	167.5
2F1	7.21	9.15	7.21	9.15	0.00	108.1
3F1	5.91	6.36	5.91	6.36	0.00	136.0
4F1	6.42	5.87	6.42	5.87	0.00	158.4

5C1

5.08

6.78

5.08

6.78

0.00

203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.8	170.1	-169.1
OPER	301.2C	-264.1	264.1	-301.2C	320.6	-244.6	283.5	-281.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50			
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50		
OPER	HS20	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50			
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50		
OPER	2F1	13.40 L	10.30	137.50	0.0	0.00	0.00	0.00			
		-34.96 R	-26.89	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.48 R	10.37	195.00	0.0	0.00	0.00	0.00			
		-50.30 R	-38.69	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.39 R	11.07	199.00	0.0	0.00	0.00	0.00			
		-54.50 R	-41.93	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.14 R	21.65	194.50	0.0	0.00	0.00	0.00			
		-46.94 R	-36.11	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.60	2.48	6.72	2.86	HS 49.66	89.4
HS20	12.67	4.14	11.21	4.77	HS 82.76	149.0
2F1	23.94	7.00	21.17	8.06	0.00	105.0
3F1	23.78	4.86	21.03	5.60	0.00	111.9
4F1	22.28	4.49	19.70	5.17	0.00	121.2
5C1	11.40	5.21	10.07	6.00	0.00	208.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.23	-18.29	2.48
OPER	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.23	-18.29	2.48
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.93	-18.66	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.17	-19.35	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.20	HS 43.09	77.6
HS20	3.59	38.67	HS 71.81	129.3
2F1	6.19	61.34	0.00	92.8
3F1	4.46	42.63	0.00	102.5
4F1	4.30	39.35	0.00	116.1
5C1	4.72	39.26	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.4	-153.1	176.4	-
OPER 255.2	274.6	-274.6	274.6	-274.6	294.1	-255.2	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50	
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50
OPER	HS20	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50	
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50
OPER	2F1	13.40 L	10.30	137.50	0.0	0.00	0.00	0.00	
		-34.96 R	-26.89	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.48 R	10.37	195.00	0.0	0.00	0.00	0.00	
		-50.30 R	-38.69	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.39 R	11.07	199.00	0.0	0.00	0.00	0.00	
		-54.50 R	-41.93	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.14 R	21.65	194.50	0.0	0.00	0.00	0.00	
		-46.94 R	-36.11	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.97	2.59	6.97	2.59	HS 51.80	93.2
HS20	11.62	4.32	11.62	4.32	HS 86.33	155.4
2F1	21.95	7.30	21.95	7.30	0.00	109.5
3F1	21.81	5.07	21.81	5.07	0.00	116.7
4F1	20.43	4.68	20.43	4.68	0.00	126.4

5C1 10.45 5.44 10.45 5.44 0.00 217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	2F1	10.78	L	8.29	107.50	0.0	0.00	0.00	0.00	0.00	0.00
		-40.05	L	-30.81	132.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	15.51	L	11.93	105.00	0.0	0.00	0.00	0.00	0.00	0.00
		-63.33	R	-48.71	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.80	L	12.92	102.00	0.0	0.00	0.00	0.00	0.00	0.00
		-74.93	R	-57.64	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	12.85	L	9.89	65.50	0.0	0.00	0.00	0.00	0.00	0.00
		-59.66	L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.28	1.35	10.96	1.57	HS 26.90	48.4
HS20	20.47	2.24	18.26	2.62	HS 44.83	80.7
2F1	31.92	5.53	28.47	6.45	0.00	82.9
3F1	22.18	3.49	19.79	4.08	0.00	80.4
4F1	20.47	2.95	18.26	3.45	0.00	79.8
5C1	26.76	3.71	23.87	4.33	0.00	148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.6	63.7
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.33	-18.29	20.26
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.33	-18.29	20.26
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.04	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.84	1.84	HS 36.86	66.4
HS20	3.07	3.07	HS 61.44	110.6
2F1	5.45	5.46	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	HS20	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	2F1	10.78 L	8.29	107.50	0.0	0.00	0.00	0.00	
		-40.05 L	-30.81	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.51 L	11.93	105.00	0.0	0.00	0.00	0.00	
		-63.33 R	-48.71	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.92	102.00	0.0	0.00	0.00	0.00	
		-74.93 R	-57.64	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 L	9.89	65.50	0.0	0.00	0.00	0.00	
		-59.66 L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
HS20	18.89	2.35	18.89	2.35	HS 46.97	84.5
2F1	29.45	5.79	29.45	5.79	0.00	86.8
3F1	20.47	3.66	20.47	3.66	0.00	84.2
4F1	18.89	3.10	18.89	3.10	0.00	83.6

5C1	24.69	3.89	24.69	3.89	0.00	155.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	2F1	10.78	L	8.29	107.50	0.0	0.00	0.00	0.00	0.00	0.00
		-40.05	L	-30.81	132.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	15.51	L	11.93	105.00	0.0	0.00	0.00	0.00	0.00	0.00
		-63.33	R	-48.71	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.80	L	12.92	102.00	0.0	0.00	0.00	0.00	0.00	0.00
		-74.93	R	-57.64	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	12.85	L	9.89	65.50	0.0	0.00	0.00	0.00	0.00	0.00
		-59.66	L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.28	1.35	10.96	1.57	HS 26.90	48.4
HS20	20.47	2.24	18.26	2.62	HS 44.83	80.7
2F1	31.92	5.53	28.47	6.45	0.00	82.9
3F1	22.18	3.49	19.79	4.08	0.00	80.4
4F1	20.47	2.95	18.26	3.45	0.00	79.8
5C1	26.76	3.71	23.87	4.33	0.00	148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.7
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.33	-20.27	20.26
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.33	-20.27	20.26
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.04	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.4
HS20	3.07	3.07	HS 61.44	110.6
2F1	5.45	5.46	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.6
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.2
Superimposed Dead Load Moment -39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	HS20	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	2F1	10.78 L	8.29	107.50	0.0	0.00	0.00	0.00	
		-40.05 L	-30.81	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.51 L	11.93	105.00	0.0	0.00	0.00	0.00	
		-63.33 R	-48.71	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.92	102.00	0.0	0.00	0.00	0.00	
		-74.93 R	-57.64	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.85 L	9.89	65.50	0.0	0.00	0.00	0.00	
		-59.66 L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
HS20	18.89	2.35	18.89	2.35	HS 46.97	84.5
2F1	29.45	5.79	29.45	5.79	0.00	86.8
3F1	20.47	3.66	20.47	3.66	0.00	84.2
4F1	18.89	3.10	18.89	3.10	0.00	83.6

5C1	24.69	3.89	24.69	3.89	0.00	155.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.7	170.1	-169.0
OPER	301.2C	-264.1	264.1	-301.2C	320.7	-244.6	283.6	-281.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50			
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00	162.50		
OPER	HS20	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50			
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00	162.50		
OPER	2F1	13.40 R	10.31	162.50	0.0	0.00	0.00	0.00			
		-34.97 L	-26.90	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.54 L	10.41	105.00	0.0	0.00	0.00	0.00			
		-50.32 L	-38.71	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.46 L	11.12	101.00	0.0	0.00	0.00	0.00			
		-54.52 L	-41.94	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.19 L	21.68	105.50	0.0	0.00	0.00	0.00			
		-46.96 L	-36.12	125.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.48	2.48	6.61	2.86	HS 49.63	89.3
HS20	12.46	4.14	11.02	4.76	HS 82.71	148.9
2F1	23.93	6.99	21.16	8.06	0.00	104.9
3F1	23.69	4.86	20.95	5.60	0.00	111.8
4F1	22.18	4.49	19.61	5.17	0.00	121.1
5C1	11.38	5.21	10.06	6.00	0.00	208.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.22	23.76	-2.47	18.28
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.22	23.76	-2.47	18.28
OPER	2F1	-2.03	17.48	-1.56	13.44	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	25.15	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.90	-2.43	17.62	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.26	2.15	HS 43.10	77.6
HS20	38.78	3.59	HS 71.84	129.3
2F1	61.57	6.19	0.00	92.8
3F1	42.79	4.46	0.00	102.6
4F1	39.66	4.30	0.00	116.1
5C1	39.42	4.72	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.5	-153.1	176.5	-
OPER 255.1	274.6	-274.6	274.6	-274.6	294.1	-255.1	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50	
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00	162.50
OPER	HS20	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50	
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00	162.50
OPER	2F1	13.40 R	10.31	162.50	0.0	0.00	0.00	0.00	
		-34.97 L	-26.90	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.54 L	10.41	105.00	0.0	0.00	0.00	0.00	
		-50.32 L	-38.71	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.46 L	11.12	101.00	0.0	0.00	0.00	0.00	
		-54.52 L	-41.94	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.19 L	21.68	105.50	0.0	0.00	0.00	0.00	
		-46.96 L	-36.12	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.59	6.86	2.59	HS 51.77	93.2
HS20	11.43	4.31	11.43	4.31	HS 86.29	155.3
2F1	21.95	7.30	21.95	7.30	0.00	109.4
3F1	21.73	5.07	21.73	5.07	0.00	116.6
4F1	20.34	4.68	20.34	4.68	0.00	126.3

5C1	10.44	5.43	10.44	5.43	0.00	217.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00			
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00	90.00		
OPER	HS20	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00			
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00	90.00		
OPER	2F1	38.30 R	29.46	165.00	0.0	0.00	0.00	0.00			
		-29.89 L	-22.99	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.68 R	35.91	169.00	0.0	0.00	0.00	0.00			
		-43.00 L	-33.08	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.01 R	33.08	169.00	0.0	0.00	0.00	0.00			
		-46.59 L	-35.84	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.34 L	41.80	108.00	0.0	0.00	0.00	0.00			
		-40.35 L	-31.04	128.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	3.44	2.69	3.92	HS 53.73	96.7
HS20	5.10	5.73	4.48	6.54	HS 89.55	161.2
2F1	7.90	8.79	6.93	10.03	0.00	104.0
3F1	6.48	6.11	5.69	6.97	0.00	130.8
4F1	7.04	5.64	6.17	6.43	0.00	152.2
5C1	5.57	6.51	4.89	7.43	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.5	0.0	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.09	93.8
HS20	27.48	4.34	HS 86.81	156.3
2F1	60.55	7.23	0.00	108.4
3F1	42.09	5.31	0.00	122.1
4F1	39.00	5.17	0.00	139.7
5C1	25.79	5.60	0.00	223.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00	
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00	90.00
OPER	HS20	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00	
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00	90.00
OPER	2F1	38.30 R	29.46	165.00	0.0	0.00	0.00	0.00	
		-29.89 L	-22.99	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.68 R	35.91	169.00	0.0	0.00	0.00	0.00	
		-43.00 L	-33.08	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.01 R	33.08	169.00	0.0	0.00	0.00	0.00	
		-46.59 L	-35.84	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.34 L	41.80	108.00	0.0	0.00	0.00	0.00	
		-40.35 L	-31.04	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.87	100.6
HS20	4.66	5.96	4.66	5.96	HS 93.11	167.6
2F1	7.21	9.14	7.21	9.14	0.00	108.1
3F1	5.91	6.35	5.91	6.35	0.00	136.0
4F1	6.42	5.86	6.42	5.86	0.00	158.3

5C1

5.08

6.77

5.08

6.77

0.00

203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.9	-165.3	151.6	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.8	-275.5	252.6	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50			
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00		
OPER	HS20	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50			
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00		
OPER	2F1	56.38 R	43.37	167.50	0.0	0.00	0.00	0.00			
		-24.80 L	-19.08	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.59 R	55.07	171.50	0.0	0.00	0.00	0.00			
		-35.69 L	-27.45	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.56 R	56.58	171.50	0.0	0.00	0.00	0.00			
		-38.67 L	-29.74	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.24 L	55.57	110.50	0.0	0.00	0.00	0.00			
		-36.38 L	-27.98	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.76	4.93	HS 35.12	63.2
HS20	3.36	7.24	2.93	8.22	HS 58.53	105.3
2F1	5.14	11.11	4.48	12.61	0.00	67.2
3F1	4.05	7.72	3.53	8.76	0.00	81.2
4F1	3.94	7.12	3.43	8.09	0.00	92.7
5C1	4.01	7.57	3.50	8.59	0.00	139.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

7.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.3	0.0	3.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.00	-5.18	13.85
OPER	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.00	-5.18	13.85
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.62	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.73	3.28	HS 65.53	118.0
HS20	17.89	5.46	HS 109.22	196.6
2F1	33.40	8.74	0.00	131.0
3F1	30.70	6.56	0.00	150.9
4F1	38.35	6.42	0.00	173.3
5C1	18.22	6.81	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.6	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.2	-286.1	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50	
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00
OPER	HS20	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50	
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00
OPER	2F1	56.38 R	43.37	167.50	0.0	0.00	0.00	0.00	
		-24.80 L	-19.08	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.59 R	55.07	171.50	0.0	0.00	0.00	0.00	
		-35.69 L	-27.45	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.56 R	56.58	171.50	0.0	0.00	0.00	0.00	
		-38.67 L	-29.74	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.24 L	55.57	110.50	0.0	0.00	0.00	0.00	
		-36.38 L	-27.98	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.51	1.83	4.51	HS 36.58	65.9
HS20	3.05	7.52	3.05	7.52	HS 60.97	109.8
2F1	4.67	11.53	4.67	11.53	0.00	70.0
3F1	3.68	8.02	3.68	8.02	0.00	84.6
4F1	3.58	7.40	3.58	7.40	0.00	96.6

5C1	3.64	7.86	3.64	7.86	0.00	145.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.2	-169.9	146.9	-192.2
OPER	301.2C	-264.1	264.1	-301.2C	282.0	-283.2	244.9	-320.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	188.00	0.0	77.26	59.43	160.00			
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33	140.00	0.00		
OPER	HS20	96.81 R	74.47	188.00	0.0	77.26	59.43	160.00			
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33	140.00	0.00		
OPER	2F1	66.19 R	50.91	170.00	0.0	0.00	0.00	0.00			
		-19.72 L	-15.17	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.74 R	65.18	170.00	0.0	0.00	0.00	0.00			
		-28.37 L	-21.82	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.87 R	69.90	174.00	0.0	0.00	0.00	0.00			
		-30.74 L	-23.65	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.83 R	64.48	172.00	0.0	0.00	0.00	0.00			
		-33.85 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.75	5.62	1.52	6.36	HS 30.36	54.6
HS20	2.91	9.37	2.53	10.60	HS 50.59	91.1
2F1	4.26	14.37	3.70	16.25	0.00	55.5
3F1	3.33	9.98	2.89	11.29	0.00	66.5
4F1	3.10	9.21	2.69	10.42	0.00	72.8
5C1	3.36	8.37	2.92	9.47	0.00	116.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

7.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-----------------	------------------------	---------------------

0.1

0.0

1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.4	-118.5	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.02	-7.16	11.55
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.02	-7.16	11.55
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.48	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.78	147.2
HS20	12.73	6.82	HS 136.31	245.4
2F1	20.84	11.00	0.00	165.0
3F1	17.45	8.48	0.00	195.1
4F1	20.41	8.49	0.00	229.2
5C1	13.61	8.50	0.00	340.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.3	172.4	-157.1	172.5	-157.1	153.3	-176.3	153.3	-
OPER 293.8	274.6	-274.6	274.6	-274.6	255.5	-293.8	255.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.81 R	74.47	188.00	0.0	77.26	59.43	160.00	
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33	140.00	0.00
OPER	HS20	96.81 R	74.47	188.00	0.0	77.26	59.43	160.00	
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33	140.00	0.00
OPER	2F1	66.19 R	50.91	170.00	0.0	0.00	0.00	0.00	
		-19.72 L	-15.17	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.74 R	65.18	170.00	0.0	0.00	0.00	0.00	
		-28.37 L	-21.82	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.87 R	69.90	174.00	0.0	0.00	0.00	0.00	
		-30.74 L	-23.65	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.83 R	64.48	172.00	0.0	0.00	0.00	0.00	
		-33.85 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.66	57.0
HS20	2.64	9.72	2.64	9.72	HS 52.77	95.0
2F1	3.86	14.90	3.86	14.90	0.00	57.9
3F1	3.02	10.36	3.02	10.36	0.00	69.3
4F1	2.81	9.56	2.81	9.56	0.00	75.9

5C1 3.05 8.68 3.05 8.68 0.00 121.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.27	8.24	8.24	0.62
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		28.83		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.5
 Superimposed Dead Load Moment 20.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.8	-166.8	123.6	-201.9
OPER	314.7C	-256.3	227.8	-314.7C	293.0	-278.0	206.1	-336.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.42 L	72.63	148.50	0.0	82.02	63.09	162.50			
		-22.44 L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00		
OPER	HS20	94.42 L	72.63	148.50	0.0	82.02	63.09	162.50			
		-22.44 L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00		
OPER	2F1	67.24 L	51.72	152.50	0.0	0.00	0.00	0.00			
		-14.63 L	-11.26	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.92 R	69.17	172.50	0.0	0.00	0.00	0.00			
		-21.05 L	-16.20	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.92 R	72.24	176.50	0.0	0.00	0.00	0.00			
		-22.81 L	-17.55	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.78 L	65.99	111.50	0.0	0.00	0.00	0.00			
		-32.72 L	-25.17	131.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	7.31	1.31	8.85	HS 26.19	47.1
HS20	3.10	12.19	2.18	14.75	HS 43.65	78.6
2F1	4.36	19.00	3.07	23.00	0.00	46.0
3F1	3.26	13.20	2.29	15.98	0.00	52.7
4F1	3.12	12.19	2.19	14.75	0.00	59.2
5C1	3.42	8.49	2.40	10.28	0.00	96.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.9
OPER	151.4	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.11	12.08	-9.31	9.29
OPER	HS20	-13.13	13.13	-10.10	10.10	-12.11	12.08	-9.31	9.29
OPER	2F1	-7.98	7.97	-6.14	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-10.01	10.00	-7.70	7.69	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.99	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.43	191.6
HS20	8.87	8.87	HS 177.39	319.3
2F1	14.59	14.60	0.00	218.9
3F1	11.63	11.64	0.00	267.6
4F1	12.46	12.47	0.00	336.4
5C1	10.60	10.60	0.00	423.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.2	168.6	-151.2	150.9	-133.5	146.9	-173.0	129.1	-
OPER 258.7	266.5	-266.5	236.9	-236.9	244.8	-288.3	215.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.42 L	72.63	148.50	0.0	82.02	63.09	162.50	
		-22.44 L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00
OPER	HS20	94.42 L	72.63	148.50	0.0	82.02	63.09	162.50	
		-22.44 L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00
OPER	2F1	67.24 L	51.72	152.50	0.0	0.00	0.00	0.00	
		-14.63 L	-11.26	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.92 R	69.17	172.50	0.0	0.00	0.00	0.00	
		-21.05 L	-16.20	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.92 R	72.24	176.50	0.0	0.00	0.00	0.00	
		-22.81 L	-17.55	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.78 L	65.99	111.50	0.0	0.00	0.00	0.00	
		-32.72 L	-25.17	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.58	1.37	6.80	HS 27.35	49.2
HS20	2.59	12.64	2.28	11.34	HS 45.58	82.0
2F1	3.64	19.70	3.20	17.68	0.00	48.0
3F1	2.72	13.69	2.39	12.29	0.00	55.0
4F1	2.61	12.64	2.29	11.34	0.00	61.9

5C1	2.85	8.81	2.51	7.91	0.00	100.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.3	-169.8	147.1	-192.1
OPER	301.2C	-264.1	264.1	-301.2C	282.2	-283.1	245.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00			
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00		
OPER	HS20	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00			
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00		
OPER	2F1	66.18 L	50.91	155.00	0.0	0.00	0.00	0.00			
		-19.64 R	-15.11	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.72 L	65.17	155.00	0.0	0.00	0.00	0.00			
		-28.26 R	-21.74	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.85 L	69.88	151.00	0.0	0.00	0.00	0.00			
		-30.61 R	-23.54	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.79 L	64.46	153.00	0.0	0.00	0.00	0.00			
		-33.79 R	-25.99	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.75	5.64	1.52	6.37	HS 30.39	54.7
HS20	2.92	9.39	2.53	10.62	HS 50.65	91.2
2F1	4.26	14.41	3.70	16.30	0.00	55.6
3F1	3.33	10.02	2.89	11.33	0.00	66.5
4F1	3.11	9.25	2.70	10.46	0.00	72.8
5C1	3.37	8.38	2.92	9.48	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.3	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.29	-11.57	7.14
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.29	-11.57	7.14
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.38	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.48	5.81	-10.37	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.66	HS 81.73	147.1
HS20	6.81	12.77	HS 136.22	245.2
2F1	10.99	20.87	0.00	164.8
3F1	8.47	17.47	0.00	194.9
4F1	8.48	20.42	0.00	229.0
5C1	8.49	13.61	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.2	172.4	-157.2	172.4	-157.2	153.4	-176.2	153.4	-
OPER 293.6	274.6	-274.6	274.6	-274.6	255.6	-293.6	255.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00	
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00
OPER	HS20	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00	
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00
OPER	2F1	66.18 L	50.91	155.00	0.0	0.00	0.00	0.00	
		-19.64 R	-15.11	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.72 L	65.17	155.00	0.0	0.00	0.00	0.00	
		-28.26 R	-21.74	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.85 L	69.88	151.00	0.0	0.00	0.00	0.00	
		-30.61 R	-23.54	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.79 L	64.46	153.00	0.0	0.00	0.00	0.00	
		-33.79 R	-25.99	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	5.84	1.59	5.84	HS 31.70	57.1
HS20	2.64	9.74	2.64	9.74	HS 52.83	95.1
2F1	3.86	14.95	3.86	14.95	0.00	57.9
3F1	3.02	10.39	3.02	10.39	0.00	69.4
4F1	2.81	9.59	2.81	9.59	0.00	76.0

5C1 3.05 8.69 3.05 8.69 0.00 122.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.89	8.24	8.24	0.62
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	174.1	-165.1	151.8	-187.4
OPER	301.2C	-264.1	264.1	-301.2C	290.1	-275.1	253.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50			
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00	0.00		
OPER	HS20	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50			
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00	0.00		
OPER	2F1	56.36 L	43.35	157.50	0.0	0.00	0.00	0.00			
		-24.71 R	-19.01	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.55 L	55.04	153.50	0.0	0.00	0.00	0.00			
		-35.55 R	-27.34	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.52 L	56.55	153.50	0.0	0.00	0.00	0.00			
		-38.50 R	-29.61	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.17 R	55.52	214.50	0.0	0.00	0.00	0.00			
		-36.26 R	-27.89	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.02	4.36	1.76	4.94	HS 35.19	63.3
HS20	3.36	7.26	2.93	8.24	HS 58.64	105.6
2F1	5.15	11.14	4.49	12.64	0.00	67.3
3F1	4.05	7.74	3.54	8.78	0.00	81.3
4F1	3.95	7.15	3.44	8.11	0.00	92.9
5C1	4.02	7.59	3.51	8.61	0.00	140.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

7.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.4
OPER	151.4	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.39	-18.03	6.71	-13.87	5.16
OPER	HS20	-20.57	4.41	-15.82	3.39	-18.03	6.71	-13.87	5.16
OPER	2F1	-12.86	3.61	-9.89	2.77	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.51	3.16	-13.47	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.62	-12.70	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.78	HS 65.47	117.8
HS20	5.46	17.97	HS 109.11	196.4
2F1	8.73	33.44	0.00	130.9
3F1	6.55	30.73	0.00	150.7
4F1	6.41	38.19	0.00	173.1
5C1	6.80	18.22	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.4	169.2	-160.3	169.2	-160.4	158.1	-171.4	158.1	-
OPER 285.7	274.6	-274.6	274.6	-274.6	263.6	-285.7	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00
OPER	HS20	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00
OPER	2F1	56.36 L	43.35	157.50	0.0	0.00	0.00	0.00
		-24.71 R	-19.01	192.50	0.0	0.00	0.00	0.00
OPER	3F1	71.55 L	55.04	153.50	0.0	0.00	0.00	0.00
		-35.55 R	-27.34	195.00	0.0	0.00	0.00	0.00
OPER	4F1	73.52 L	56.55	153.50	0.0	0.00	0.00	0.00
		-38.50 R	-29.61	198.00	0.0	0.00	0.00	0.00
OPER	5C1	72.17 R	55.52	214.50	0.0	0.00	0.00	0.00
		-36.26 R	-27.89	196.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.65	66.0
HS20	3.05	7.54	3.06	7.54	HS 61.09	110.0
2F1	4.68	11.56	4.68	11.56	0.00	70.1
3F1	3.68	8.04	3.68	8.04	0.00	84.7
4F1	3.59	7.42	3.59	7.42	0.00	96.8

5C1 3.65 7.88 3.65 7.88 0.00 146.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.9	-157.2	159.7	-179.5
OPER	301.2C	-264.1	264.1	-301.2C	303.2	-262.1	266.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.24 L	45.57	142.00	0.0	44.93	34.56	170.00			
		-45.68 R	-35.14	208.00	0.0	-35.61	-27.39	185.00	235.00		
OPER	HS20	59.24 L	45.57	142.00	0.0	44.93	34.56	170.00			
		-45.68 R	-35.14	208.00	0.0	-35.61	-27.39	185.00	235.00		
OPER	2F1	38.26 L	29.43	160.00	0.0	0.00	0.00	0.00			
		-29.77 R	-22.90	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.63 L	35.87	156.00	0.0	0.00	0.00	0.00			
		-42.83 R	-32.95	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.96 L	33.04	156.00	0.0	0.00	0.00	0.00			
		-46.39 R	-35.68	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.23 R	41.71	217.00	0.0	0.00	0.00	0.00			
		-40.18 R	-30.91	197.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.07	3.44	2.69	3.93	HS 53.90	97.0
HS20	5.12	5.74	4.49	6.55	HS 89.83	161.7
2F1	7.92	8.80	6.95	10.05	0.00	104.3
3F1	6.50	6.12	5.71	6.99	0.00	131.2
4F1	7.06	5.65	6.19	6.45	0.00	152.5
5C1	5.59	6.52	4.91	7.45	0.00	196.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.98	4.44	-16.14	3.42
OPER	HS20	-25.40	2.99	-19.54	2.30	-20.98	4.44	-16.14	3.42
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.93	-15.97	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.16	-16.39	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.77	-15.16	3.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.58	HS 52.04	93.7
HS20	4.34	27.63	HS 86.74	156.1
2F1	7.22	60.33	0.00	108.3
3F1	5.30	41.93	0.00	122.0
4F1	5.17	38.84	0.00	139.6
5C1	5.59	25.74	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.2
Superimposed Dead Load Moment -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.6	164.0	-165.6	164.0	-165.6	166.0	-163.6	166.0	-
OPER 272.6	274.6	-274.6	274.6	-274.6	276.6	-272.6	276.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.24 L	45.57	142.00	0.0	44.93	170.00	
		-45.68 R	-35.14	208.00	0.0	-35.61	185.00	235.00
OPER	HS20	59.24 L	45.57	142.00	0.0	44.93	170.00	
		-45.68 R	-35.14	208.00	0.0	-35.61	185.00	235.00
OPER	2F1	38.26 L	29.43	160.00	0.0	0.00	0.00	
		-29.77 R	-22.90	192.50	0.0	0.00	0.00	0.00
OPER	3F1	46.63 L	35.87	156.00	0.0	0.00	0.00	
		-42.83 R	-32.95	195.00	0.0	0.00	0.00	0.00
OPER	4F1	42.96 L	33.04	156.00	0.0	0.00	0.00	
		-46.39 R	-35.68	198.00	0.0	0.00	0.00	0.00
OPER	5C1	54.23 R	41.71	217.00	0.0	0.00	0.00	
		-40.18 R	-30.91	197.00	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.80	3.58	2.80	3.58	HS 56.03	100.9
HS20	4.67	5.97	4.67	5.97	HS 93.39	168.1
2F1	7.23	9.16	7.23	9.16	0.00	108.5
3F1	5.93	6.36	5.93	6.37	0.00	136.4
4F1	6.44	5.88	6.44	5.88	0.00	158.7

5C1

5.10

6.78

5.10

6.78

0.00

204.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.9	-146.3	170.6	-168.6
OPER	301.2C	-264.1	264.1	-301.2C	321.5	-243.8	284.3	-280.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50			
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50		
OPER	HS20	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50			
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50		
OPER	2F1	13.37 L	10.28	162.50	0.0	0.00	0.00	0.00			
		-34.83 R	-26.80	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.41 R	10.32	220.00	0.0	0.00	0.00	0.00			
		-50.11 R	-38.55	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.33 R	11.02	224.00	0.0	0.00	0.00	0.00			
		-54.27 R	-41.75	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.04 R	21.57	219.50	0.0	0.00	0.00	0.00			
		-46.72 R	-35.94	199.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.73	2.48	6.84	2.86	HS 49.63	89.3
HS20	12.88	4.14	11.39	4.77	HS 82.72	148.9
2F1	24.05	7.00	21.27	8.06	0.00	105.0
3F1	23.96	4.86	21.20	5.61	0.00	111.9
4F1	22.43	4.49	19.84	5.18	0.00	121.3
5C1	11.46	5.22	10.14	6.01	0.00	208.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

7.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.6	-7.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-64.9	74.9
OPER	151.4	-108.1	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.21	-18.30	2.47
OPER	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.21	-18.30	2.47
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.93	-18.66	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.17	-19.35	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.34	HS 43.07	77.5
HS20	3.59	38.91	HS 71.78	129.2
2F1	6.18	61.35	0.00	92.8
3F1	4.45	42.64	0.00	102.5
4F1	4.30	39.35	0.00	116.0
5C1	4.72	39.26	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.6	156.7	-172.9	156.7	-172.9	176.9	-152.6	176.9	-
OPER 254.4	274.6	-274.6	274.6	-274.6	294.9	-254.4	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50	
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50
OPER	HS20	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50	
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50
OPER	2F1	13.37 L	10.28	162.50	0.0	0.00	0.00	0.00	
		-34.83 R	-26.80	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.41 R	10.32	220.00	0.0	0.00	0.00	0.00	
		-50.11 R	-38.55	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.33 R	11.02	224.00	0.0	0.00	0.00	0.00	
		-54.27 R	-41.75	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.04 R	21.57	219.50	0.0	0.00	0.00	0.00	
		-46.72 R	-35.94	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.09	2.59	7.09	2.59	HS 51.78	93.2
HS20	11.81	4.32	11.81	4.32	HS 86.30	155.3
2F1	22.06	7.30	22.06	7.30	0.00	109.5
3F1	21.98	5.08	21.98	5.08	0.00	116.7
4F1	20.58	4.69	20.58	4.69	0.00	126.5

5C1	10.52	5.45	10.52	5.45	0.00	217.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.6	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.7	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	2F1	10.79 L	8.30	132.50	0.0	0.00	0.00	0.00			
		-40.10 L	-30.85	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.52 L	11.94	130.00	0.0	0.00	0.00	0.00			
		-63.35 R	-48.73	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.82 L	12.94	127.00	0.0	0.00	0.00	0.00			
		-74.97 R	-57.67	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00			
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.51	1.34	11.16	1.57	HS 26.81	48.3
HS20	20.85	2.23	18.60	2.61	HS 44.68	80.4
2F1	31.97	5.50	28.52	6.42	0.00	82.4
3F1	22.22	3.48	19.83	4.07	0.00	80.0
4F1	20.50	2.94	18.30	3.43	0.00	79.4
5C1	26.80	3.70	23.91	4.32	0.00	148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.0	105.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.37	-18.30	20.28
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.37	-18.30	20.28
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.04	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
HS20	3.07	3.07	HS 61.35	110.4
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	2F1	10.79 L	8.30	132.50	0.0	0.00	0.00	0.00	
		-40.10 L	-30.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.52 L	11.94	130.00	0.0	0.00	0.00	0.00	
		-63.35 R	-48.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.82 L	12.94	127.00	0.0	0.00	0.00	0.00	
		-74.97 R	-57.67	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00	
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.54	1.40	HS 28.09	50.6
HS20	19.24	2.34	19.24	2.34	HS 46.82	84.3
2F1	29.50	5.76	29.50	5.76	0.00	86.4
3F1	20.50	3.65	20.50	3.65	0.00	83.9
4F1	18.92	3.08	18.92	3.08	0.00	83.2

5C1	24.74	3.88	24.74	3.88	0.00	155.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.3
Superimposed Dead Load Moment -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.6	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.7	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	2F1	10.79 L	8.30	132.50	0.0	0.00	0.00	0.00			
		-40.10 L	-30.85	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.52 L	11.94	130.00	0.0	0.00	0.00	0.00			
		-63.35 R	-48.73	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.82 L	12.94	127.00	0.0	0.00	0.00	0.00			
		-74.97 R	-57.67	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00			
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	12.51	1.34	11.16	1.57	HS 26.81	48.3
HS20	20.85	2.23	18.60	2.61	HS 44.68	80.4
2F1	31.97	5.50	28.52	6.42	0.00	82.4
3F1	22.22	3.48	19.83	4.07	0.00	80.0
4F1	20.50	2.94	18.30	3.43	0.00	79.4
5C1	26.80	3.70	23.91	4.32	0.00	148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.0	105.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.36	26.37	-20.27	20.28
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.36	26.37	-20.27	20.28
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.04	-22.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.97	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
HS20	3.07	3.07	HS 61.35	110.4
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	2F1	10.79 L	8.30	132.50	0.0	0.00	0.00	0.00	
		-40.10 L	-30.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.52 L	11.94	130.00	0.0	0.00	0.00	0.00	
		-63.35 R	-48.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.82 L	12.94	127.00	0.0	0.00	0.00	0.00	
		-74.97 R	-57.67	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00	
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.54	1.40	HS 28.09	50.6
HS20	19.24	2.34	19.24	2.34	HS 46.82	84.3
2F1	29.50	5.76	29.50	5.76	0.00	86.4
3F1	20.50	3.65	20.50	3.65	0.00	83.9
4F1	18.92	3.08	18.92	3.08	0.00	83.2

5C1	24.74	3.88	24.74	3.88	0.00	155.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 8.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.7	-146.5	170.4	-168.7
OPER	301.2C	-264.1	264.1	-301.2C	321.2	-244.1	284.0	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50			
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00	187.50		
OPER	HS20	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50			
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00	187.50		
OPER	2F1	13.52 R	10.40	187.50	0.0	0.00	0.00	0.00			
		-35.01 L	-26.93	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.55 L	10.43	130.00	0.0	0.00	0.00	0.00			
		-50.38 L	-38.75	155.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.48 L	11.14	126.00	0.0	0.00	0.00	0.00			
		-54.59 L	-41.99	152.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	28.29 L	21.76	130.50	0.0	0.00	0.00	0.00			
		-47.00 L	-36.16	150.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.54	2.48	6.67	2.85	HS 49.51	89.1
HS20	12.57	4.13	11.11	4.75	HS 82.52	148.5
2F1	23.76	6.97	21.01	8.03	0.00	104.6
3F1	23.69	4.84	20.96	5.58	0.00	111.4
4F1	22.18	4.47	19.62	5.15	0.00	120.7
5C1	11.35	5.19	10.04	5.98	0.00	207.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.9	64.8
OPER	151.4	-124.9	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.95	30.11	-2.27	23.16	-3.15	23.80	-2.42	18.31
OPER	HS20	-2.95	30.11	-2.27	23.16	-3.15	23.80	-2.42	18.31
OPER	2F1	-2.02	17.48	-1.56	13.44	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	25.15	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.90	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.80	2.15	HS 43.03	77.5
HS20	39.67	3.59	HS 71.72	129.1
2F1	61.73	6.18	0.00	92.7
3F1	42.90	4.45	0.00	102.4
4F1	39.74	4.29	0.00	115.9
5C1	39.47	4.72	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.5
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.8	156.8	-172.8	156.8	-172.8	176.8	-152.8	176.8	-
OPER 254.7	274.6	-274.6	274.6	-274.6	294.6	-254.7	294.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00
OPER	HS20	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00
OPER	2F1	13.52 R	10.40	187.50	0.0	0.00	0.00	0.00
		-35.01 L	-26.93	157.50	0.0	0.00	0.00	0.00
OPER	3F1	13.55 L	10.43	130.00	0.0	0.00	0.00	0.00
		-50.38 L	-38.75	155.00	0.0	0.00	0.00	0.00
OPER	4F1	14.48 L	11.14	126.00	0.0	0.00	0.00	0.00
		-54.59 L	-41.99	152.00	0.0	0.00	0.00	0.00
OPER	5C1	28.29 L	21.76	130.50	0.0	0.00	0.00	0.00
		-47.00 L	-36.16	150.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.92	2.58	6.92	2.58	HS 51.66	93.0
HS20	11.53	4.30	11.53	4.30	HS 86.09	155.0
2F1	21.79	7.27	21.79	7.27	0.00	109.1
3F1	21.73	5.05	21.74	5.05	0.00	116.3
4F1	20.35	4.66	20.35	4.66	0.00	126.0

5C1	10.41	5.42	10.41	5.42	0.00	216.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00			
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00	115.00		
OPER	HS20	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00			
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00	115.00		
OPER	2F1	38.42 R	29.55	190.00	0.0	0.00	0.00	0.00			
		-29.93 L	-23.02	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.87 R	36.06	194.00	0.0	0.00	0.00	0.00			
		-43.06 L	-33.13	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.18 R	33.21	194.00	0.0	0.00	0.00	0.00			
		-46.66 L	-35.89	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.50 L	41.92	133.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	153.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.05	3.43	2.68	3.92	HS 53.56	96.4
HS20	5.09	5.72	4.46	6.53	HS 89.27	160.7
2F1	7.88	8.77	6.91	10.02	0.00	103.7
3F1	6.46	6.10	5.66	6.96	0.00	130.3
4F1	7.01	5.63	6.15	6.42	0.00	152.0
5C1	5.55	6.50	4.87	7.41	0.00	194.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.5

0.0

5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.4	-122.8	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.95	25.40	-2.27	19.53	-4.40	20.99	-3.38	16.14
OPER	HS20	-2.95	25.40	-2.27	19.53	-4.40	20.99	-3.38	16.14
OPER	2F1	-2.02	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.76	2.60	HS 52.00	93.6
HS20	27.94	4.33	HS 86.67	156.0
2F1	60.71	7.22	0.00	108.3
3F1	42.19	5.30	0.00	121.9
4F1	39.08	5.16	0.00	139.5
5C1	25.84	5.59	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.6	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00	
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00	115.00
OPER	HS20	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00	
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00	115.00
OPER	2F1	38.42 R	29.55	190.00	0.0	0.00	0.00	0.00	
		-29.93 L	-23.02	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.87 R	36.06	194.00	0.0	0.00	0.00	0.00	
		-43.06 L	-33.13	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.18 R	33.21	194.00	0.0	0.00	0.00	0.00	
		-46.66 L	-35.89	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.50 L	41.92	133.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.57	2.79	3.57	HS 55.69	100.2
HS20	4.64	5.95	4.64	5.95	HS 92.82	167.1
2F1	7.19	9.13	7.19	9.13	0.00	107.8
3F1	5.89	6.34	5.89	6.34	0.00	135.5
4F1	6.39	5.85	6.39	5.86	0.00	158.1

5C1

5.07

6.76

5.07

6.76

0.00

202.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
 Check Point I. D. 8.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.6	-165.6	151.3	-187.9
OPER	301.2C	-264.1	264.1	-301.2C	289.3	-276.0	252.2	-313.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50			
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00		
OPER	HS20	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50			
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00		
OPER	2F1	56.52 R	43.48	192.50	0.0	0.00	0.00	0.00			
		-24.84 L	-19.11	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.83 R	55.25	196.50	0.0	0.00	0.00	0.00			
		-35.75 L	-27.50	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.78 R	56.76	196.50	0.0	0.00	0.00	0.00			
		-38.74 L	-29.80	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.46 L	55.74	135.50	0.0	0.00	0.00	0.00			
		-36.47 L	-28.05	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.93	HS 34.97	63.0
HS20	3.34	7.24	2.91	8.22	HS 58.29	104.9
2F1	5.12	11.11	4.46	12.60	0.00	66.9
3F1	4.03	7.72	3.51	8.76	0.00	80.7
4F1	3.92	7.12	3.42	8.08	0.00	92.3
5C1	3.99	7.57	3.48	8.59	0.00	139.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.3
OPER	151.4	-120.7	112.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.56	-3.40	15.82	-6.67	18.04	-5.13	13.88
OPER	HS20	-4.42	20.56	-3.40	15.82	-6.67	18.04	-5.13	13.88
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.08	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.27	HS 65.42	117.8
HS20	18.10	5.45	HS 109.04	196.3
2F1	33.45	8.72	0.00	130.8
3F1	30.74	6.55	0.00	150.7
4F1	38.42	6.41	0.00	173.0
5C1	18.28	6.80	0.00	271.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.9	169.5	-160.0	169.6	-160.0	157.6	-171.9	157.6	-
OPER 286.6	274.6	-274.6	274.6	-274.6	262.7	-286.6	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50	
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00
OPER	HS20	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50	
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00
OPER	2F1	56.52 R	43.48	192.50	0.0	0.00	0.00	0.00	
		-24.84 L	-19.11	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.83 R	55.25	196.50	0.0	0.00	0.00	0.00	
		-35.75 L	-27.50	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.78 R	56.76	196.50	0.0	0.00	0.00	0.00	
		-38.74 L	-29.80	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.46 L	55.74	135.50	0.0	0.00	0.00	0.00	
		-36.47 L	-28.05	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	4.51	1.82	4.51	HS 36.44	65.6
HS20	3.04	7.52	3.04	7.52	HS 60.73	109.3
2F1	4.65	11.53	4.65	11.53	0.00	69.7
3F1	3.66	8.02	3.66	8.02	0.00	84.1
4F1	3.56	7.40	3.56	7.40	0.00	96.1

5C1	3.62	7.86	3.63	7.86	0.00	145.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	168.6	-170.5	146.4	-192.8
OPER	301.2C	-264.1	264.1	-301.2C	281.1	-284.2	244.0	-321.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00			
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00	0.00		
OPER	HS20	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00			
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00	0.00		
OPER	2F1	66.35 R	51.04	195.00	0.0	0.00	0.00	0.00			
		-19.76 L	-15.20	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.94 R	65.34	195.00	0.0	0.00	0.00	0.00			
		-28.43 L	-21.87	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.12 R	70.10	199.00	0.0	0.00	0.00	0.00			
		-30.81 L	-23.70	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.03 R	64.64	197.00	0.0	0.00	0.00	0.00			
		-33.94 L	-26.11	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	5.63	1.51	6.36	HS 30.17	54.3
HS20	2.90	9.38	2.51	10.60	HS 50.28	90.5
2F1	4.24	14.38	3.68	16.26	0.00	55.2
3F1	3.31	9.99	2.87	11.30	0.00	66.1
4F1	3.09	9.23	2.68	10.43	0.00	72.3
5C1	3.35	8.37	2.90	9.47	0.00	116.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	8.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.4	-118.7	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.98	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.58
OPER	HS20	-8.98	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.58
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.48	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.69	13.45	-6.68	10.35	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.70	4.08	HS 81.65	147.0
HS20	12.84	6.80	HS 136.09	245.0
2F1	20.88	10.98	0.00	164.7
3F1	17.48	8.47	0.00	194.8
4F1	20.44	8.48	0.00	228.9
5C1	13.66	8.49	0.00	339.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	172.8	-156.7	172.8	-156.7	152.7	-176.9	152.7	-
176.9								
OPER	274.6	-274.6	274.6	-274.6	254.5	-294.8	254.5	-
294.8								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00
OPER	HS20	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00
OPER	2F1	66.35 R	51.04	195.00	0.0	0.00	0.00	0.00
		-19.76 L	-15.20	157.50	0.0	0.00	0.00	0.00
OPER	3F1	84.94 R	65.34	195.00	0.0	0.00	0.00	0.00
		-28.43 L	-21.87	155.00	0.0	0.00	0.00	0.00
OPER	4F1	91.12 R	70.10	199.00	0.0	0.00	0.00	0.00
		-30.81 L	-23.70	152.00	0.0	0.00	0.00	0.00
OPER	5C1	84.03 R	64.64	197.00	0.0	0.00	0.00	0.00
		-33.94 L	-26.11	155.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.84	1.57	5.84	HS 31.48	56.7
HS20	2.62	9.73	2.62	9.73	HS 52.46	94.4
2F1	3.84	14.92	3.84	14.92	0.00	57.5
3F1	3.00	10.37	3.00	10.37	0.00	68.9
4F1	2.79	9.57	2.79	9.57	0.00	75.4

5C1 3.03 8.69 3.03 8.69 0.00 121.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	166.8	-172.3	144.6	-194.6
OPER	301.2C	-264.1	264.1	-301.2C	278.0	-287.2	240.9	-324.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.70	L	72.84	173.50	0.0	82.51	63.47	187.50		
		-22.50	L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00	
OPER	HS20	94.70	L	72.84	173.50	0.0	82.51	63.47	187.50		
		-22.50	L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00	
OPER	2F1	67.43	L	51.87	177.50	0.0	0.00	0.00	0.00		
		-14.68	L	-11.29	157.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	90.18	R	69.37	197.50	0.0	0.00	0.00	0.00		
		-21.12	L	-16.24	155.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.19	R	72.45	201.50	0.0	0.00	0.00	0.00		
		-22.88	L	-17.60	152.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	86.34	R	66.42	238.50	0.0	0.00	0.00	0.00		
		-32.81	L	-25.24	156.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.76	7.66	1.53	8.65	HS 30.53	55.0
HS20	2.94	12.76	2.54	14.41	HS 50.88	91.6
2F1	4.12	19.57	3.57	22.10	0.00	53.6
3F1	3.08	13.60	2.67	15.36	0.00	61.4
4F1	2.95	12.55	2.56	14.18	0.00	69.1
5C1	3.22	8.75	2.79	9.88	0.00	111.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.0	69.7
OPER	151.4	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.12	-10.10	10.10	-12.04	12.12	-9.26	9.32
OPER	HS20	-13.13	13.12	-10.10	10.10	-12.04	12.12	-9.26	9.32
OPER	2F1	-7.98	7.97	-6.14	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-10.01	10.00	-7.70	7.69	0.00	0.00	0.00	0.00
OPER	4F1	-9.35	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.95	10.98	-8.43	8.45	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.33	5.31	HS 106.29	191.3
HS20	8.88	8.86	HS 177.14	318.9
2F1	14.61	14.58	0.00	218.7
3F1	11.65	11.62	0.00	267.3
4F1	12.48	12.45	0.00	336.2
5C1	10.65	10.59	0.00	423.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	174.0	-155.5	174.0	-155.5	150.9	-178.7	150.9	-
OPER 297.8	274.6	-274.6	274.6	-274.6	251.5	-297.8	251.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.70 L	72.84	173.50	0.0	82.51	63.47	187.50	
		-22.50 L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00
OPER	HS20	94.70 L	72.84	173.50	0.0	82.51	63.47	187.50	
		-22.50 L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00
OPER	2F1	67.43 L	51.87	177.50	0.0	0.00	0.00	0.00	
		-14.68 L	-11.29	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.18 R	69.37	197.50	0.0	0.00	0.00	0.00	
		-21.12 L	-16.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.19 R	72.45	201.50	0.0	0.00	0.00	0.00	
		-22.88 L	-17.60	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.34 R	66.42	238.50	0.0	0.00	0.00	0.00	
		-32.81 L	-25.24	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	7.94	1.59	7.94	HS 31.87	57.4
HS20	2.66	13.23	2.66	13.23	HS 53.11	95.6
2F1	3.73	20.29	3.73	20.29	0.00	55.9
3F1	2.79	14.10	2.79	14.10	0.00	64.1
4F1	2.67	13.02	2.67	13.02	0.00	72.1

5C1	2.91	9.07	2.91	9.07	0.00	116.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 8.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	168.2	-171.0	145.9	-193.2
OPER	301.2C	-264.1	264.1	-301.2C	280.3	-284.9	243.2	-322.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00			
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00		
OPER	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00			
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00		
OPER	2F1	66.34 L	51.03	180.00	0.0	0.00	0.00	0.00			
		-19.67 R	-15.13	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.92 L	65.32	180.00	0.0	0.00	0.00	0.00			
		-28.30 R	-21.77	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.10 L	70.07	176.00	0.0	0.00	0.00	0.00			
		-30.66 R	-23.59	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.06 L	64.66	178.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	5.70	1.50	6.44	HS 30.09	54.2
HS20	2.89	9.49	2.51	10.73	HS 50.15	90.3
2F1	4.23	14.49	3.67	16.38	0.00	55.0
3F1	3.30	10.07	2.86	11.38	0.00	65.9
4F1	3.08	9.29	2.67	10.50	0.00	72.1
5C1	3.34	8.42	2.89	9.51	0.00	115.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.4	-114.5	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-14.97	9.32	-11.52	7.17
OPER	HS20	-16.78	8.97	-12.91	6.90	-14.97	9.32	-11.52	7.17
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.38	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.48	5.80	-10.37	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.62	HS 81.87	147.4
HS20	6.82	12.70	HS 136.45	245.6
2F1	11.00	20.84	0.00	165.0
3F1	8.49	17.45	0.00	195.2
4F1	8.49	20.39	0.00	229.3
5C1	8.51	13.59	0.00	340.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	173.1	-156.4	173.1	-156.4	152.3	-177.3	152.3	-
OPER 295.5	274.6	-274.6	274.6	-274.6	253.8	-295.5	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00	
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00
OPER	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00	
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00
OPER	2F1	66.34 L	51.03	180.00	0.0	0.00	0.00	0.00	
		-19.67 R	-15.13	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.92 L	65.32	180.00	0.0	0.00	0.00	0.00	
		-28.30 R	-21.77	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.10 L	70.07	176.00	0.0	0.00	0.00	0.00	
		-30.66 R	-23.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.06 L	64.66	178.00	0.0	0.00	0.00	0.00	
		-33.85 R	-26.04	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.91	1.57	5.91	HS 31.40	56.5
HS20	2.62	9.85	2.62	9.85	HS 52.33	94.2
2F1	3.83	15.03	3.83	15.03	0.00	57.4
3F1	2.99	10.44	2.99	10.44	0.00	68.7
4F1	2.79	9.64	2.79	9.64	0.00	75.2

5C1 3.02 8.73 3.02 8.73 0.00 120.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	172.7	-166.5	150.4	-188.8
OPER	301.2C	-264.1	264.1	-301.2C	287.8	-277.5	250.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.51	164.50	0.0	65.44	50.34	192.50			
		-37.72 R	-29.02	233.00	0.0	-29.21	-22.47	210.00	0.00		
OPER	HS20	86.47 L	66.51	164.50	0.0	65.44	50.34	192.50			
		-37.72 R	-29.02	233.00	0.0	-29.21	-22.47	210.00	0.00		
OPER	2F1	56.49 L	43.45	182.50	0.0	0.00	0.00	0.00			
		-24.72 R	-19.02	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.78 L	55.22	178.50	0.0	0.00	0.00	0.00			
		-35.57 R	-27.36	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.73 L	56.72	178.50	0.0	0.00	0.00	0.00			
		-38.55 R	-29.65	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.98 R	56.14	239.50	0.0	0.00	0.00	0.00			
		-36.31 R	-27.93	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.41	1.74	5.00	HS 34.79	62.6
HS20	3.33	7.36	2.90	8.34	HS 57.98	104.4
2F1	5.09	11.22	4.44	12.73	0.00	66.6
3F1	4.01	7.80	3.49	8.84	0.00	80.3
4F1	3.90	7.20	3.40	8.16	0.00	91.8
5C1	3.94	7.64	3.43	8.66	0.00	137.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.3	-3.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-67.4	72.3
OPER	151.4	-112.4	120.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.75	-13.82	5.19
OPER	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.75	-13.82	5.19
OPER	2F1	-12.86	3.61	-9.89	2.77	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.51	3.16	-13.47	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.62	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.28	10.71	HS 65.57	118.0
HS20	5.46	17.85	HS 109.29	196.7
2F1	8.74	33.40	0.00	131.1
3F1	6.56	30.68	0.00	151.0
4F1	6.42	38.12	0.00	173.4
5C1	6.81	18.19	0.00	272.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	170.1	-159.4	170.1	-159.4	156.7	-172.8	156.7	-
OPER 288.0	274.6	-274.6	274.6	-274.6	261.2	-288.0	261.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 L	66.51	164.50	0.0	65.44	50.34	192.50	
		-37.72 R	-29.02	233.00	0.0	-29.21	-22.47	210.00	0.00
OPER	HS20	86.47 L	66.51	164.50	0.0	65.44	50.34	192.50	
		-37.72 R	-29.02	233.00	0.0	-29.21	-22.47	210.00	0.00
OPER	2F1	56.49 L	43.45	182.50	0.0	0.00	0.00	0.00	
		-24.72 R	-19.02	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.78 L	55.22	178.50	0.0	0.00	0.00	0.00	
		-35.57 R	-27.36	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.73 L	56.72	178.50	0.0	0.00	0.00	0.00	
		-38.55 R	-29.65	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.98 R	56.14	239.50	0.0	0.00	0.00	0.00	
		-36.31 R	-27.93	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.81	4.58	1.81	4.58	HS 36.25	65.3
HS20	3.02	7.64	3.02	7.64	HS 60.42	108.8
2F1	4.62	11.65	4.62	11.65	0.00	69.4
3F1	3.64	8.10	3.64	8.10	0.00	83.7
4F1	3.54	7.47	3.54	7.47	0.00	95.7

5C1	3.58	7.93	3.58	7.93	0.00	143.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 8.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	180.2	-158.9	158.0	-181.2
OPER	301.2C	-264.1	264.1	-301.2C	300.4	-264.9	263.3	-302.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00			
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00	177.50		
OPER	HS20	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00			
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00	177.50		
OPER	2F1	38.38 L	29.52	185.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-29.78 R	-22.91	217.50	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	46.81 L	36.00	181.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-42.85 R	-32.96	220.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	43.11 L	33.16	181.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-46.43 R	-35.72	223.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	55.26 R	42.51	242.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		-40.23 R	-30.94	222.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.03	3.50	2.66	3.99	HS 53.18	95.7
HS20	5.06	5.83	4.43	6.64	HS 88.63	159.5
2F1	7.83	8.89	6.86	10.14	0.00	102.9
3F1	6.42	6.18	5.62	7.05	0.00	129.4
4F1	6.97	5.70	6.11	6.50	0.00	154.0
5C1	5.44	6.58	4.76	7.51	0.00	190.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-5.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.5
OPER	151.4	-110.3	122.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.91	4.48	-16.08	3.44
OPER	HS20	-25.40	2.99	-19.54	2.30	-20.91	4.48	-16.08	3.44
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.77	2.93	-15.97	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.16	-16.39	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-19.69	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.61	16.43	HS 52.13	93.8
HS20	4.34	27.38	HS 86.88	156.4
2F1	7.24	60.24	0.00	108.5
3F1	5.31	41.86	0.00	122.2
4F1	5.18	38.78	0.00	139.8
5C1	5.60	25.71	0.00	224.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 165.3	165.1	-164.5	165.1	-164.5	164.3	-165.2	164.3	-
OPER 275.4	274.6	-274.6	274.6	-274.6	273.8	-275.4	273.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00	
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00	177.50
OPER	HS20	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00	
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00	177.50
OPER	2F1	38.38 L	29.52	185.00	0.0	0.00	0.00	0.00	
		-29.78 R	-22.91	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.81 L	36.00	181.00	0.0	0.00	0.00	0.00	
		-42.85 R	-32.96	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.11 L	33.16	181.00	0.0	0.00	0.00	0.00	
		-46.43 R	-35.72	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.26 R	42.51	242.00	0.0	0.00	0.00	0.00	
		-40.23 R	-30.94	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.77	3.64	2.77	3.64	HS 55.31	99.6
HS20	4.61	6.06	4.61	6.06	HS 92.18	165.9
2F1	7.14	9.25	7.14	9.25	0.00	107.0
3F1	5.85	6.43	5.85	6.43	0.00	134.6
4F1	6.35	5.93	6.35	5.93	0.00	160.2

5C1	4.96	6.85	4.96	6.85	0.00	198.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	190.9	-148.2	168.6	-170.5
OPER	301.2C	-264.1	264.1	-301.2C	318.2	-247.1	281.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50			
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50		
OPER	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50			
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50		
OPER	2F1	13.47 L	10.36	187.50	0.0	0.00	0.00	0.00			
		-34.84 R	-26.80	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.17 R	11.67	245.00	0.0	0.00	0.00	0.00			
		-50.13 R	-38.56	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.23 R	12.49	249.00	0.0	0.00	0.00	0.00			
		-54.32 R	-41.78	223.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.42 R	22.63	244.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	224.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.46	2.52	6.59	2.90	HS 50.38	90.7
HS20	12.44	4.20	10.99	4.83	HS 83.97	151.1
2F1	23.62	7.09	20.86	8.16	0.00	106.4
3F1	20.98	4.93	18.53	5.67	0.00	113.4
4F1	19.60	4.55	17.32	5.23	0.00	122.8
5C1	10.82	5.28	9.56	6.08	0.00	211.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

8.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.7
OPER	151.4	-108.3	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.72	3.24	-18.24	2.49
OPER	HS20	-30.12	3.12	-23.17	2.40	-23.72	3.24	-18.24	2.49
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.93	-18.66	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.17	-19.35	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	3.18	-17.60	2.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.16	23.05	HS 43.14	77.7
HS20	3.60	38.42	HS 71.90	129.4
2F1	6.19	61.25	0.00	92.9
3F1	4.46	42.57	0.00	102.6
4F1	4.30	39.29	0.00	116.2
5C1	4.73	39.20	0.00	189.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.6	158.0	-171.6	158.0	-171.6	175.0	-154.6	175.0	-
OPER 257.6	274.6	-274.6	274.6	-274.6	291.6	-257.6	291.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50	
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50
OPER	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50	
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50
OPER	2F1	13.47 L	10.36	187.50	0.0	0.00	0.00	0.00	
		-34.84 R	-26.80	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.17 R	11.67	245.00	0.0	0.00	0.00	0.00	
		-50.13 R	-38.56	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.23 R	12.49	249.00	0.0	0.00	0.00	0.00	
		-54.32 R	-41.78	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.42 R	22.63	244.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.84	2.63	6.84	2.63	HS 52.53	94.6
HS20	11.40	4.38	11.40	4.38	HS 87.56	157.6
2F1	21.65	7.39	21.65	7.39	0.00	110.9
3F1	19.23	5.14	19.23	5.14	0.00	118.2
4F1	17.97	4.74	17.97	4.74	0.00	128.1

5C1	9.91	5.51	9.91	5.51	0.00	220.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.7
OPER	301.2C	-264.1	264.1	-301.2C	341.2	-224.1	304.0	-261.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	2F1	12.08 R	9.29	242.50	0.0	0.00	0.00	0.00			
		-39.97 L	-30.75	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.37 R	13.36	245.00	0.0	0.00	0.00	0.00			
		-63.23 R	-48.64	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.78 R	14.45	248.00	0.0	0.00	0.00	0.00			
		-74.75 R	-57.50	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00			
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.20	1.37	9.09	1.59	HS 27.30	49.1
HS20	17.00	2.28	15.15	2.65	HS 45.49	81.9
2F1	28.25	5.61	25.18	6.53	0.00	84.1
3F1	19.64	3.55	17.50	4.13	0.00	81.5
4F1	18.17	3.00	16.19	3.49	0.00	80.9
5C1	22.08	3.77	19.68	4.40	0.00	150.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.7	64.0
OPER	151.4	-106.2	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.48	-23.17	26.52	-23.72	26.11	-18.24	20.08
OPER	HS20	-30.12	34.48	-23.17	26.52	-23.72	26.11	-18.24	20.08
OPER	2F1	-17.48	19.43	-13.45	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.44	-18.66	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.01	-19.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	25.93	-17.60	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.85	1.86	HS 36.91	66.4
HS20	3.08	3.09	HS 61.52	110.7
2F1	5.46	5.49	0.00	81.9
3F1	3.87	3.89	0.00	88.9
4F1	3.66	3.68	0.00	98.7
5C1	4.10	4.11	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.8	-140.8	188.8	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	2F1	12.08 R	9.29	242.50	0.0	0.00	0.00	0.00	
		-39.97 L	-30.75	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.37 R	13.36	245.00	0.0	0.00	0.00	0.00	
		-63.23 R	-48.64	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.78 R	14.45	248.00	0.0	0.00	0.00	0.00	
		-74.75 R	-57.50	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00	
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.41	1.43	9.41	1.43	HS 28.58	51.4
HS20	15.68	2.38	15.68	2.38	HS 47.64	85.7
2F1	26.05	5.87	26.05	5.87	0.00	88.1
3F1	18.11	3.71	18.11	3.71	0.00	85.4
4F1	16.75	3.14	16.75	3.14	0.00	84.8

5C1	20.36	3.95	20.36	3.95	0.00	158.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.7
OPER	301.2C	-264.1	264.1	-301.2C	341.2	-224.1	304.0	-261.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	2F1	12.08 R	9.29	242.50	0.0	0.00	0.00	0.00			
		-39.97 L	-30.75	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.37 R	13.36	245.00	0.0	0.00	0.00	0.00			
		-63.23 R	-48.64	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.78 R	14.45	248.00	0.0	0.00	0.00	0.00			
		-74.75 R	-57.50	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00			
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.20	1.37	9.09	1.59	HS 27.30	49.1
HS20	17.00	2.28	15.15	2.65	HS 45.49	81.9
2F1	28.25	5.61	25.18	6.53	0.00	84.1
3F1	19.64	3.55	17.50	4.13	0.00	81.5
4F1	18.17	3.00	16.19	3.49	0.00	80.9
5C1	22.08	3.77	19.68	4.40	0.00	150.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

9.000

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load

Superimposed Dead Load

(-) Shear (+) Shear

(-) Shear (+) Shear

-0.8

0.7

-9.5

9.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)
INV.	90.8	-63.7	64.0
OPER	151.4	-106.2	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.48	-26.56	26.52	-26.29	26.11	-20.22	20.08
OPER	HS20	-34.53	34.48	-26.56	26.52	-26.29	26.11	-20.22	20.08
OPER	2F1	-19.45	19.43	-14.96	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.44	-21.13	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.01	-22.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-25.91	25.93	-19.93	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.86	HS 36.91	66.4
HS20	3.08	3.09	HS 61.52	110.7
2F1	5.46	5.49	0.00	81.9
3F1	3.87	3.89	0.00	88.9
4F1	3.66	3.68	0.00	98.7
5C1	4.10	4.11	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.8	-140.8	188.8	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	2F1	12.08 R	9.29	242.50	0.0	0.00	0.00	0.00	
		-39.97 L	-30.75	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.37 R	13.36	245.00	0.0	0.00	0.00	0.00	
		-63.23 R	-48.64	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.78 R	14.45	248.00	0.0	0.00	0.00	0.00	
		-74.75 R	-57.50	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00	
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.41	1.43	9.41	1.43	HS 28.58	51.4
HS20	15.68	2.38	15.68	2.38	HS 47.64	85.7
2F1	26.05	5.87	26.05	5.87	0.00	88.1
3F1	18.11	3.71	18.11	3.71	0.00	85.4
4F1	16.75	3.14	16.75	3.14	0.00	84.8

5C1	20.36	3.95	20.36	3.95	0.00	158.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	191.5	-147.6	169.3	-169.9
OPER	301.2C	-264.1	264.1	-301.2C	319.2	-246.0	282.1	-283.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50			
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00	212.50		
OPER	HS20	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50			
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00	212.50		
OPER	2F1	13.43 R	10.33	212.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.49 L	10.38	155.00	0.0	0.00	0.00	0.00			
		-50.18 L	-38.60	180.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.42 L	11.09	151.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.80	177.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	28.17 L	21.67	155.50	0.0	0.00	0.00	0.00			
		-46.73 L	-35.95	175.50	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.40	2.50	6.54	2.88	HS 50.05	90.1
HS20	12.33	4.17	10.89	4.80	HS 83.41	150.1
2F1	23.76	7.05	21.00	8.12	0.00	105.8
3F1	23.66	4.90	20.91	5.64	0.00	112.8
4F1	22.15	4.53	19.57	5.21	0.00	122.2
5C1	11.33	5.26	10.02	6.06	0.00	210.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

9.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.5	65.2
OPER	151.4	-124.2	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	2F1	-2.28	17.46	-1.75	13.43	0.00	0.00	0.00	0.00
OPER	3F1	-3.27	24.22	-2.52	18.63	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	25.11	-2.71	19.31	0.00	0.00	0.00	0.00
OPER	5C1	-3.50	22.87	-2.69	17.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.47	2.17	HS 43.39	78.1
HS20	34.11	3.62	HS 72.32	130.2
2F1	54.54	6.23	0.00	93.4
3F1	37.92	4.49	0.00	103.2
4F1	35.20	4.33	0.00	116.9
5C1	35.48	4.75	0.00	190.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.0	157.6	-172.0	157.6	-172.0	175.6	-154.0	175.6	-
OPER 256.6	274.6	-274.6	274.6	-274.6	292.7	-256.6	292.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50	
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00	212.50
OPER	HS20	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50	
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00	212.50
OPER	2F1	13.43 R	10.33	212.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.49 L	10.38	155.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.42 L	11.09	151.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.80	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.17 L	21.67	155.50	0.0	0.00	0.00	0.00	
		-46.73 L	-35.95	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.78	2.61	6.78	2.61	HS 52.19	93.9
HS20	11.30	4.35	11.30	4.35	HS 86.99	156.6
2F1	21.79	7.36	21.79	7.36	0.00	110.4
3F1	21.69	5.11	21.69	5.11	0.00	117.6
4F1	20.30	4.72	20.30	4.72	0.00	127.5

5C1 10.39 5.49 10.39 5.49 0.00 219.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 9.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.5	-157.7	159.2	-180.0
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.8	265.3	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00			
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00	140.00		
OPER	HS20	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00			
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00	140.00		
OPER	2F1	38.27 R	29.44	215.00	0.0	0.00	0.00	0.00			
		-29.78 L	-22.91	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.65 R	35.89	219.00	0.0	0.00	0.00	0.00			
		-42.85 L	-32.96	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.98 R	33.06	219.00	0.0	0.00	0.00	0.00			
		-46.41 L	-35.70	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.28 L	41.75	158.00	0.0	0.00	0.00	0.00			
		-40.20 L	-30.92	178.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	3.45	2.68	3.94	HS 53.71	96.7
HS20	5.10	5.75	4.48	6.56	HS 89.51	161.1
2F1	7.90	8.82	6.93	10.07	0.00	104.0
3F1	6.48	6.13	5.69	7.00	0.00	130.8
4F1	7.04	5.66	6.17	6.46	0.00	152.9
5C1	5.57	6.54	4.89	7.46	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

9.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.3	66.5
OPER	151.4	-122.1	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	25.33	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	HS20	-3.64	25.33	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	2F1	-2.28	15.22	-1.75	11.71	0.00	0.00	0.00	0.00
OPER	3F1	-3.27	20.71	-2.52	15.93	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	21.27	-2.71	16.36	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	19.65	-4.06	15.12	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.14	2.62	HS 52.46	94.4
HS20	26.90	4.37	HS 87.43	157.4
2F1	53.63	7.28	0.00	109.1
3F1	37.29	5.35	0.00	123.0
4F1	34.62	5.21	0.00	140.6
5C1	23.14	5.64	0.00	225.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 164.0	164.3	-165.3	164.3	-165.3	165.5	-164.0	165.5	-
OPER 273.4	274.6	-274.6	274.6	-274.6	275.9	-273.4	275.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00	
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00	140.00
OPER	HS20	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00	
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00	140.00
OPER	2F1	38.27 R	29.44	215.00	0.0	0.00	0.00	0.00	
		-29.78 L	-22.91	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.65 R	35.89	219.00	0.0	0.00	0.00	0.00	
		-42.85 L	-32.96	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.98 R	33.06	219.00	0.0	0.00	0.00	0.00	
		-46.41 L	-35.70	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.28 L	41.75	158.00	0.0	0.00	0.00	0.00	
		-40.20 L	-30.92	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.79	3.59	2.79	3.59	HS 55.84	100.5
HS20	4.65	5.98	4.65	5.98	HS 93.07	167.5
2F1	7.21	9.18	7.21	9.18	0.00	108.1
3F1	5.91	6.38	5.91	6.38	0.00	136.0
4F1	6.42	5.89	6.42	5.89	0.00	159.0

5C1

5.08

6.80

5.08

6.80

0.00

203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
 Check Point I. D. 9.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.7
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	174.5	-164.6	152.2	-186.9
OPER	301.2C	-264.1	264.1	-301.2C	290.9	-274.4	253.7	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50			
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00	0.00		
OPER	HS20	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50			
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00	0.00		
OPER	2F1	56.28 R	43.29	217.50	0.0	0.00	0.00	0.00			
		-24.69 L	-18.99	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.43 R	54.95	221.50	0.0	0.00	0.00	0.00			
		-35.52 L	-27.32	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.40 R	56.46	221.50	0.0	0.00	0.00	0.00			
		-38.47 L	-29.59	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.10 L	55.46	160.50	0.0	0.00	0.00	0.00			
		-36.31 L	-27.93	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.03	4.35	1.77	4.93	HS 35.41	63.7
HS20	3.38	7.24	2.95	8.23	HS 59.02	106.2
2F1	5.17	11.11	4.51	12.62	0.00	67.6
3F1	4.07	7.72	3.55	8.77	0.00	81.7
4F1	3.96	7.13	3.46	8.10	0.00	93.3
5C1	4.03	7.56	3.52	8.58	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.4	-120.0	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	2F1	-3.63	12.82	-2.79	9.86	0.00	0.00	0.00	0.00
OPER	3F1	-3.95	17.07	-3.04	13.13	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	17.45	-2.71	13.42	0.00	0.00	0.00	0.00
OPER	5C1	-7.30	16.45	-5.61	12.66	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.55	3.30	HS 66.02	118.8
HS20	17.59	5.50	HS 110.03	198.1
2F1	33.11	8.80	0.00	132.0
3F1	30.42	6.61	0.00	152.0
4F1	34.03	6.47	0.00	174.6
5C1	16.45	6.86	0.00	274.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.0	168.9	-160.6	168.9	-160.6	158.6	-171.0	158.6	-
OPER 285.0	274.6	-274.6	274.6	-274.6	264.3	-285.0	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50	
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00	0.00
OPER	HS20	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50	
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00	0.00
OPER	2F1	56.28 R	43.29	217.50	0.0	0.00	0.00	0.00	
		-24.69 L	-18.99	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.43 R	54.95	221.50	0.0	0.00	0.00	0.00	
		-35.52 L	-27.32	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.40 R	56.46	221.50	0.0	0.00	0.00	0.00	
		-38.47 L	-29.59	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.10 L	55.46	160.50	0.0	0.00	0.00	0.00	
		-36.31 L	-27.93	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.84	4.51	1.84	4.51	HS 36.88	66.4
HS20	3.07	7.52	3.07	7.52	HS 61.47	110.7
2F1	4.70	11.54	4.70	11.54	0.00	70.4
3F1	3.70	8.02	3.70	8.02	0.00	85.1
4F1	3.60	7.41	3.60	7.41	0.00	97.2

5C1	3.67	7.85	3.67	7.85	0.00	146.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	170.6	-168.5	148.4	-190.8
OPER	301.2C	-264.1	264.1	-301.2C	284.4	-280.9	247.3	-318.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00			
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00		
OPER	HS20	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00			
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00		
OPER	2F1	65.98 R	50.76	220.00	0.0	0.00	0.00	0.00			
		-19.60 L	-15.07	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.46 R	64.97	220.00	0.0	0.00	0.00	0.00			
		-28.19 L	-21.69	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.57 R	69.67	224.00	0.0	0.00	0.00	0.00			
		-30.53 L	-23.49	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.57 R	64.28	222.00	0.0	0.00	0.00	0.00			
		-34.03 L	-26.18	180.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	5.61	1.54	6.35	HS 30.89	55.6
HS20	2.96	9.34	2.57	10.58	HS 51.48	92.7
2F1	4.31	14.33	3.75	16.23	0.00	56.2
3F1	3.37	9.96	2.93	11.28	0.00	67.3
4F1	3.14	9.20	2.73	10.41	0.00	73.7
5C1	3.40	8.25	2.96	9.34	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.5
-----	-----	-----

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-70.8	68.9
OPER	151.4	-118.0	114.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.12	16.75	-7.02	12.88	-9.41	14.76	-7.24	11.35
OPER	HS20	-9.12	16.75	-7.02	12.88	-9.41	14.76	-7.24	11.35
OPER	2F1	-5.71	10.36	-4.39	7.97	0.00	0.00	0.00	0.00
OPER	3F1	-6.82	13.43	-5.25	10.33	0.00	0.00	0.00	0.00
OPER	4F1	-5.83	13.41	-4.49	10.32	0.00	0.00	0.00	0.00
OPER	5C1	-9.45	13.40	-7.27	10.31	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.53	4.12	HS 82.31	148.2
HS20	12.54	6.86	HS 137.19	246.9
2F1	20.67	11.09	0.00	166.3
3F1	17.30	8.55	0.00	196.7
4F1	20.22	8.57	0.00	231.3
5C1	12.49	8.57	0.00	342.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.9	171.5	-158.1	171.5	-158.1	154.7	-174.8	154.7	-
OPER 291.4	274.6	-274.6	274.6	-274.6	257.8	-291.4	257.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00	
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00
OPER	HS20	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00	
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00
OPER	2F1	65.98 R	50.76	220.00	0.0	0.00	0.00	0.00	
		-19.60 L	-15.07	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.46 R	64.97	220.00	0.0	0.00	0.00	0.00	
		-28.19 L	-21.69	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.57 R	69.67	224.00	0.0	0.00	0.00	0.00	
		-30.53 L	-23.49	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.57 R	64.28	222.00	0.0	0.00	0.00	0.00	
		-34.03 L	-26.18	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.82	1.61	5.82	HS 32.20	58.0
HS20	2.68	9.69	2.68	9.69	HS 53.67	96.6
2F1	3.91	14.87	3.91	14.87	0.00	58.6
3F1	3.05	10.34	3.05	10.34	0.00	70.2
4F1	2.85	9.54	2.85	9.55	0.00	76.9

5C1

3.09

8.56

3.09

8.56

0.00

123.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Dc	b max	b min	t	ry
21.0	19.77	0.400	9.27	8.24	8.24	0.62	1.84
			10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	108.756

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		41.59		102.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 9.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	178.0	-164.6	125.9	-199.7
OPER	314.7C	-256.3	227.8	-314.7C	296.7	-274.3	209.8	-332.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50			
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00		
OPER	HS20	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50			
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00		
OPER	2F1	66.98 L	51.52	202.50	0.0	0.00	0.00	0.00			
		-16.38 R	-12.60	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.50 R	68.85	222.50	0.0	0.00	0.00	0.00			
		-23.56 R	-18.13	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.48 L	71.91	198.50	0.0	0.00	0.00	0.00			
		-25.47 R	-19.60	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	85.43 L	65.72	161.50	0.0	0.00	0.00	0.00			
		-34.30 R	-26.39	243.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.89	6.05	1.34	7.34	HS 26.76	48.2
HS20	3.15	10.08	2.23	12.23	HS 44.59	80.3
2F1	4.43	16.75	3.13	20.32	0.00	47.0
3F1	3.32	11.64	2.34	14.12	0.00	53.9
4F1	3.17	10.77	2.24	13.06	0.00	60.6
5C1	3.47	8.00	2.45	9.70	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-0.5	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.5	70.2
OPER	151.4	-115.9	117.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	2F1	-8.01	7.94	-6.16	6.11	0.00	0.00	0.00	0.00
OPER	3F1	-10.05	9.95	-7.73	7.65	0.00	0.00	0.00	0.00
OPER	4F1	-9.40	9.28	-7.23	7.14	0.00	0.00	0.00	0.00
OPER	5C1	-11.66	10.93	-8.97	8.41	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.23	5.36	HS 104.65	188.4
HS20	8.72	8.94	HS 174.42	314.0
2F1	14.47	14.73	0.00	217.0
3F1	11.53	11.75	0.00	265.3
4F1	12.34	12.61	0.00	333.1
5C1	9.94	10.70	0.00	397.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	167.1	-152.7	149.4	-134.9	149.1	-170.7	131.3	-
OPER 255.0	266.5	-266.5	236.9	-236.9	248.5	-284.6	218.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50	
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00
OPER	HS20	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50	
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00
OPER	2F1	66.98 L	51.52	202.50	0.0	0.00	0.00	0.00	
		-16.38 R	-12.60	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.50 R	68.85	222.50	0.0	0.00	0.00	0.00	
		-23.56 R	-18.13	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.48 L	71.91	198.50	0.0	0.00	0.00	0.00	
		-25.47 R	-19.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.43 L	65.72	161.50	0.0	0.00	0.00	0.00	
		-34.30 R	-26.39	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.59	6.27	1.40	5.62	HS 27.92	50.3
HS20	2.64	10.46	2.33	9.37	HS 46.53	83.8
2F1	3.71	17.37	3.27	15.56	0.00	49.0
3F1	2.78	12.08	2.45	10.82	0.00	56.2
4F1	2.66	11.17	2.34	10.01	0.00	63.2

5C1	2.91	8.30	2.56	7.43	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.600
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	172.3	-166.8	150.0	-189.1
OPER	301.2C	-264.1	264.1	-301.2C	287.2	-278.1	250.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00			
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00	0.00		
OPER	HS20	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00			
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00	0.00		
OPER	2F1	65.79 L	50.60	205.00	0.0	0.00	0.00	0.00			
		-22.07 R	-16.98	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.12 L	64.71	205.00	0.0	0.00	0.00	0.00			
		-31.75 R	-24.42	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.21 L	69.39	201.00	0.0	0.00	0.00	0.00			
		-34.32 R	-26.40	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.84 L	62.18	203.00	0.0	0.00	0.00	0.00			
		-36.23 R	-27.87	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.55	1.56	5.16	HS 31.17	56.1
HS20	2.98	7.58	2.60	8.60	HS 51.95	93.5
2F1	4.36	12.60	3.80	14.28	0.00	57.0
3F1	3.41	8.76	2.97	9.93	0.00	68.4
4F1	3.18	8.10	2.77	9.18	0.00	74.8
5C1	3.55	7.68	3.09	8.70	0.00	123.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.2	-2.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.3	71.4
OPER	151.4	-113.8	119.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	2F1	-10.44	5.65	-8.03	4.35	0.00	0.00	0.00	0.00
OPER	3F1	-13.54	6.72	-10.42	5.17	0.00	0.00	0.00	0.00
OPER	4F1	-13.53	5.68	-10.41	4.37	0.00	0.00	0.00	0.00
OPER	5C1	-13.88	8.66	-10.68	6.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.02	7.92	HS 80.37	144.7
HS20	6.70	13.19	HS 133.94	241.1
2F1	10.90	21.08	0.00	163.5
3F1	8.40	17.72	0.00	193.3
4F1	8.41	20.95	0.00	227.1
5C1	8.20	13.75	0.00	327.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	170.4	-159.2	170.4	-159.2	156.4	-173.2	156.4	-
OPER 288.7	274.6	-274.6	274.6	-274.6	260.6	-288.6	260.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00	
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00	0.00
OPER	HS20	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00	
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00	0.00
OPER	2F1	65.79 L	50.60	205.00	0.0	0.00	0.00	0.00	
		-22.07 R	-16.98	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.12 L	64.71	205.00	0.0	0.00	0.00	0.00	
		-31.75 R	-24.42	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.21 L	69.39	201.00	0.0	0.00	0.00	0.00	
		-34.32 R	-26.40	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.84 L	62.18	203.00	0.0	0.00	0.00	0.00	
		-36.23 R	-27.87	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	4.72	1.62	4.72	HS 32.49	58.5
HS20	2.71	7.87	2.71	7.87	HS 54.14	97.5
2F1	3.96	13.08	3.96	13.08	0.00	59.4
3F1	3.10	9.09	3.10	9.09	0.00	71.3
4F1	2.89	8.41	2.89	8.41	0.00	78.0

5C1	3.22	7.97	3.22	7.97	0.00	129.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	177.8	-161.3	155.6	-183.6
OPER	301.2C	-264.1	264.1	-301.2C	296.4	-268.9	259.3	-306.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50			
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00		
OPER	HS20	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50			
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00		
OPER	2F1	55.84 L	42.96	207.50	0.0	0.00	0.00	0.00			
		-27.77 R	-21.36	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	70.83 L	54.48	203.50	0.0	0.00	0.00	0.00			
		-39.94 R	-30.72	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	72.73 L	55.95	203.50	0.0	0.00	0.00	0.00			
		-43.18 R	-33.21	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	66.58 L	51.22	201.50	0.0	0.00	0.00	0.00			
		-39.74 R	-30.57	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.08	3.50	1.82	3.98	HS 36.37	65.5
HS20	3.46	5.83	3.03	6.63	HS 60.62	109.1
2F1	5.31	9.68	4.64	11.02	0.00	69.6
3F1	4.18	6.73	3.66	7.66	0.00	84.2
4F1	4.07	6.23	3.57	7.09	0.00	96.2
5C1	4.45	6.76	3.89	7.70	0.00	155.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

9.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.7
OPER	151.4	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	2F1	-12.90	3.57	-9.92	2.75	0.00	0.00	0.00	0.00
OPER	3F1	-17.18	3.84	-13.22	2.95	0.00	0.00	0.00	0.00
OPER	4F1	-17.57	3.16	-13.51	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.82	6.58	-12.94	5.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.24	11.26	HS 64.87	116.8
HS20	5.41	18.76	HS 108.12	194.6
2F1	8.66	33.89	0.00	129.9
3F1	6.50	31.58	0.00	149.6
4F1	6.36	38.30	0.00	171.7
5C1	6.64	18.41	0.00	265.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 9.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.7	166.7	-162.9	166.7	-162.9	161.9	-167.7	161.9	-
OPER 279.4	274.6	-274.6	274.6	-274.6	269.8	-279.4	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50	
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00
OPER	HS20	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50	
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00
OPER	2F1	55.84 L	42.96	207.50	0.0	0.00	0.00	0.00	
		-27.77 R	-21.36	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	70.83 L	54.48	203.50	0.0	0.00	0.00	0.00	
		-39.94 R	-30.72	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.73 L	55.95	203.50	0.0	0.00	0.00	0.00	
		-43.18 R	-33.21	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.58 L	51.22	201.50	0.0	0.00	0.00	0.00	
		-39.74 R	-30.57	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.89	3.63	1.89	3.63	HS 37.85	68.1
HS20	3.15	6.06	3.15	6.06	HS 63.09	113.6
2F1	4.83	10.06	4.83	10.06	0.00	72.5
3F1	3.81	7.00	3.81	7.00	0.00	87.6
4F1	3.71	6.47	3.71	6.47	0.00	100.2

5C1 4.05 7.03 4.05 7.03 0.00 162.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.0
Superimposed Dead Load Moment -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	186.5	-152.7	164.2	-175.0
OPER	301.2C	-264.1	264.1	-301.2C	310.8	-254.5	273.6	-291.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.31 L	44.85	192.00	0.0	41.30	31.77	220.00			
		-55.58 R	-42.76	258.00	0.0	-37.44	-28.80	235.00	202.50		
OPER	HS20	58.31 L	44.85	192.00	0.0	41.30	31.77	220.00			
		-55.58 R	-42.76	258.00	0.0	-37.44	-28.80	235.00	202.50		
OPER	2F1	37.68 L	28.99	210.00	0.0	0.00	0.00	0.00			
		-33.46 R	-25.74	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	45.76 L	35.20	206.00	0.0	0.00	0.00	0.00			
		-48.13 R	-37.02	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.15 L	32.42	206.00	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.31 L	35.62	169.00	0.0	0.00	0.00	0.00			
		-44.77 R	-34.44	247.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.20	2.75	2.82	3.15	HS 54.95	98.9
HS20	5.33	4.58	4.69	5.25	HS 91.58	164.8
2F1	8.25	7.61	7.26	8.72	0.00	108.9
3F1	6.79	5.29	5.98	6.06	0.00	121.6
4F1	7.37	4.89	6.49	5.61	0.00	132.1
5C1	6.71	5.68	5.91	6.51	0.00	227.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S05

Check Point I. D.

9.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.4	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.23
OPER	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.23
OPER	2F1	-15.29	2.04	-11.76	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-20.82	2.93	-16.02	2.26	0.00	0.00	0.00	0.00
OPER	4F1	-21.40	3.16	-16.46	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-20.12	4.74	-15.48	3.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.58	17.63	HS 51.55	92.8
HS20	4.30	29.39	HS 85.92	154.7
2F1	7.17	60.46	0.00	107.6
3F1	5.27	42.03	0.00	121.1
4F1	5.12	38.95	0.00	138.4
5C1	5.45	26.00	0.00	218.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05 HS20 HS20
Check Point I. D. 9.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.0 -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.0	161.0	-168.6	161.0	-168.6	170.5	-159.0	170.5	-
OPER 265.1	274.6	-274.6	274.6	-274.6	284.2	-265.1	284.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	58.31 L	44.85 R	192.00	0.0	41.30	31.77	220.00	
		-55.58 R	-42.76 L	258.00	0.0	-37.44	-28.80	235.00	202.50
OPER	HS20	58.31 L	44.85 R	192.00	0.0	41.30	31.77	220.00	
		-55.58 R	-42.76 L	258.00	0.0	-37.44	-28.80	235.00	202.50
OPER	2F1	37.68 L	28.99 R	210.00	0.0	0.00	0.00	0.00	
		-33.46 R	-25.74 L	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.76 L	35.20 R	206.00	0.0	0.00	0.00	0.00	
		-48.13 R	-37.02 L	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.15 L	32.42 R	206.00	0.0	0.00	0.00	0.00	
		-52.03 R	-40.02 L	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.31 L	35.62 R	169.00	0.0	0.00	0.00	0.00	
		-44.77 R	-34.44 L	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.92	2.86	2.92	2.86	HS 57.23	103.0
HS20	4.87	4.77	4.87	4.77	HS 95.38	171.7
2F1	7.54	7.92	7.54	7.92	0.00	113.1
3F1	6.21	5.51	6.21	5.51	0.00	126.7
4F1	6.74	5.09	6.74	5.09	0.00	137.6

5C1

6.14

5.92

6.14

5.92

0.00

236.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.5
Superimposed Dead Load Moment -26.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	198.2	-141.0	175.9	-163.3
OPER	301.2C	-264.1	264.1	-301.2C	330.3	-235.0	293.2	-272.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50			
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50		
OPER	HS20	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50			
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50		
OPER	2F1	12.83 L	9.87	212.50	0.0	0.00	0.00	0.00			
		-39.15 R	-30.11	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	9.44 L	7.26	208.50	0.0	0.00	0.00	0.00			
		-56.31 R	-43.32	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.03 L	6.94	176.00	0.0	0.00	0.00	0.00			
		-60.88 R	-46.83	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	21.47 L	16.51	171.50	0.0	0.00	0.00	0.00			
		-55.04 R	-42.34	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.41	2.08	8.35	2.40	HS 41.53	74.7
HS20	15.69	3.46	13.92	4.01	HS 69.21	124.6
2F1	25.75	6.00	22.85	6.95	0.00	90.0
3F1	35.00	4.17	31.07	4.83	0.00	96.0
4F1	36.60	3.86	32.49	4.47	0.00	104.2
5C1	15.39	4.27	13.66	4.94	0.00	170.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	9.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.7	-8.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.5	75.2
OPER	151.4	-107.6	125.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.31
OPER	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.31
OPER	2F1	-17.51	2.04	-13.47	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	2.93	-18.70	2.26	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	3.18	-19.40	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	3.16	-18.10	2.43	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.13	24.04	HS 42.66	76.8
HS20	3.56	40.07	HS 71.10	128.0
2F1	6.14	61.48	0.00	92.2
3F1	4.43	42.73	0.00	101.8
4F1	4.27	39.46	0.00	115.2
5C1	4.57	39.59	0.00	182.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.5
Superimposed Dead Load Moment -26.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.3	153.1	-176.4	153.1	-176.4	182.2	-147.3	182.2	-
OPER 245.5	274.6	-274.6	274.6	-274.6	303.7	-245.5	303.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50	
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50
OPER	HS20	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50	
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50
OPER	2F1	12.83 L	9.87	212.50	0.0	0.00	0.00	0.00	
		-39.15 R	-30.11	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	9.44 L	7.26	208.50	0.0	0.00	0.00	0.00	
		-56.31 R	-43.32	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.03 L	6.94	176.00	0.0	0.00	0.00	0.00	
		-60.88 R	-46.83	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.47 L	16.51	171.50	0.0	0.00	0.00	0.00	
		-55.04 R	-42.34	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.65	2.17	8.65	2.17	HS 43.39	78.1
HS20	14.42	3.62	14.42	3.62	HS 72.32	130.2
2F1	23.68	6.27	23.68	6.27	0.00	94.1
3F1	32.19	4.36	32.19	4.36	0.00	100.3
4F1	33.65	4.03	33.65	4.03	0.00	108.9

5C1	14.15	4.46	14.15	4.46	0.00	178.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.	Neutral Axis		Dc	b max	b min	t	ry
			top	bott					
21.0	19.77	0.400	9.89	9.88	8.24	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.6C	-158.4	158.4	-215.6C	247.9	-126.2	190.7	-183.4
OPER	359.4C	-264.1	264.1	-359.4C	413.2	-210.3	317.9	-305.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00		
OPER	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00		
OPER	2F1	10.97 L	8.44	182.50	0.0	0.00	0.00	0.00			
		-44.84 R	-34.49	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.78 L	12.14	180.00	0.0	0.00	0.00	0.00			
		-67.17 L	-51.67	221.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.09 L	13.15	177.00	0.0	0.00	0.00	0.00			
		-80.98 L	-62.29	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00			
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	14.73	1.22	11.33	1.77	HS 24.41	43.9
HS20	24.55	2.03	18.89	2.96	HS 40.68	73.2
2F1	37.67	4.69	28.98	6.82	0.00	70.3
3F1	26.18	3.13	20.14	4.55	0.00	72.0
4F1	24.17	2.60	18.60	3.77	0.00	70.1
5C1	31.62	2.85	24.33	4.14	0.00	114.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-8.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	103.0	-63.3	71.7
OPER	171.7	-105.5	119.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	2F1	-17.51	20.01	-13.47	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	28.67	-18.70	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	30.80	-19.40	23.69	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	27.32	-18.10	21.02	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.83	1.95	HS 36.51	65.7
HS20	3.04	3.25	HS 60.85	109.5
2F1	5.42	5.97	0.00	81.3
3F1	3.84	4.17	0.00	88.2
4F1	3.63	3.88	0.00	97.9
5C1	3.95	4.37	0.00	158.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 132.5	143.3	-186.3	143.3	-186.3	197.1	-132.5	197.1	-
OPER 220.8	274.6	-274.6	274.6	-274.6	328.4	-220.8	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.83 L	12.95 R	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51 L	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	HS20	16.83 L	12.95 R	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51 L	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	2F1	10.97 L	8.44 R	182.50	0.0	0.00	0.00	0.00	
		-44.84 R	-34.49 L	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.78 L	12.14 R	180.00	0.0	0.00	0.00	0.00	
		-67.17 R	-51.67 L	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.09 L	13.15 R	177.00	0.0	0.00	0.00	0.00	
		-80.98 R	-62.29 L	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.07 L	10.05 R	140.50	0.0	0.00	0.00	0.00	
		-73.72 R	-56.71 L	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.71	1.28	11.71	1.28	HS 25.64	46.1
HS20	19.51	2.14	19.51	2.14	HS 42.73	76.9
2F1	29.94	4.93	29.94	4.93	0.00	73.9
3F1	20.81	3.29	20.81	3.29	0.00	75.6
4F1	19.21	2.73	19.22	2.73	0.00	73.6

5C1	25.14	2.99	25.14	2.99	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
124.8	124.8	124.8	124.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	111.193

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-158.4	158.4	-215.6C	247.9	-126.2	190.7	-183.4
OPER	359.4C	-264.1	264.1	-359.4C	413.2	-210.3	317.9	-305.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00		
OPER	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00		
OPER	2F1	10.97 L	8.44	182.50	0.0	0.00	0.00	0.00			
		-44.84 R	-34.49	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.78 L	12.14	180.00	0.0	0.00	0.00	0.00			
		-67.17 L	-51.67	221.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.09 L	13.15	177.00	0.0	0.00	0.00	0.00			
		-80.98 L	-62.29	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00			
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	14.73	1.22	11.33	1.77	HS 24.41	43.9
HS20	24.55	2.03	18.89	2.96	HS 40.68	73.2
2F1	37.67	4.69	28.98	6.82	0.00	70.3
3F1	26.18	3.13	20.14	4.55	0.00	72.0
4F1	24.17	2.60	18.60	3.77	0.00	70.1
5C1	31.62	2.85	24.33	4.14	0.00	114.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-10.1	11.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-63.3	71.7
OPER	171.7	-105.5	119.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	2F1	-19.46	20.01	-14.97	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-27.50	28.67	-21.16	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-29.10	30.80	-22.38	23.69	0.00	0.00	0.00	0.00
OPER	5C1	-26.68	27.32	-20.52	21.02	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.83	1.95	HS 36.51	65.7
HS20	3.04	3.25	HS 60.85	109.5
2F1	5.42	5.97	0.00	81.3
3F1	3.84	4.17	0.00	88.2
4F1	3.63	3.88	0.00	97.9
5C1	3.95	4.37	0.00	158.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -4.4
Superimposed Dead Load Moment -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.5	143.3	-186.3	143.3	-186.3	197.1	-132.5	197.1	-
OPER 220.8	274.6	-274.6	274.6	-274.6	328.4	-220.8	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.83 L	12.95 R	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51 L	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	HS20	16.83 L	12.95 R	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51 L	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	2F1	10.97 L	8.44 R	182.50	0.0	0.00	0.00	0.00	
		-44.84 R	-34.49 L	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.78 L	12.14 R	180.00	0.0	0.00	0.00	0.00	
		-67.17 R	-51.67 L	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.09 L	13.15 R	177.00	0.0	0.00	0.00	0.00	
		-80.98 R	-62.29 L	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.07 L	10.05 R	140.50	0.0	0.00	0.00	0.00	
		-73.72 R	-56.71 L	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.71	1.28	11.71	1.28	HS 25.64	46.1
HS20	19.51	2.14	19.51	2.14	HS 42.73	76.9
2F1	29.94	4.93	29.94	4.93	0.00	73.9
3F1	20.81	3.29	20.81	3.29	0.00	75.6
4F1	19.21	2.73	19.22	2.73	0.00	73.6

5C1	25.14	2.99	25.14	2.99	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.9
Superimposed Dead Load Moment -22.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	230.5	-173.9	203.7	-200.8
OPER	359.4C	-314.7	314.7	-359.4C	384.2	-289.9	339.5	-334.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50			
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00		
OPER	HS20	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50			
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00		
OPER	2F1	13.40 R	10.31	237.50	0.0	0.00	0.00	0.00			
		-36.82 L	-28.32	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.20 L	10.93	180.00	0.0	0.00	0.00	0.00			
		-52.98 L	-40.75	205.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.16 L	11.67	176.00	0.0	0.00	0.00	0.00			
		-57.40 L	-44.16	202.00	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	29.51 L	22.70	180.50	0.0	0.00	0.00	0.00			
		-52.22 R	-40.17	261.00	0.0	0.00	0.00	0.00	0.00		0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.57	2.80	8.46	3.23	HS 55.93	100.7
HS20	15.95	4.66	14.09	5.38	HS 93.22	167.8
2F1	28.67	7.87	25.33	9.09	0.00	118.1
3F1	27.05	5.47	23.90	6.32	0.00	125.9
4F1	25.33	5.05	22.39	5.83	0.00	136.4
5C1	13.02	5.55	11.51	6.41	0.00	222.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.9	0.0	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-85.6	72.9
OPER	171.7	-142.7	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.64	32.71	-0.50	25.16	-1.34	24.40	-1.03	18.77
OPER	HS20	-0.64	32.71	-0.50	25.16	-1.34	24.40	-1.03	18.77
OPER	2F1	-0.44	18.39	-0.34	14.15	0.00	0.00	0.00	0.00
OPER	3F1	-0.63	25.94	-0.49	19.95	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	27.32	-0.52	21.01	0.00	0.00	0.00	0.00
OPER	5C1	-1.00	24.64	-0.77	18.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.70	2.23	HS 44.60	80.3
HS20	106.17	3.72	HS 74.33	133.8
2F1	325.10	6.61	0.00	99.1
3F1	225.98	4.68	0.00	107.8
4F1	209.42	4.45	0.00	120.1
5C1	142.50	4.93	0.00	197.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.9
Superimposed Dead Load Moment -22.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.5	186.4	-206.3	186.4	-206.3	211.2	-181.5	211.2	-
OPER 302.5	327.3	-327.3	327.3	-327.3	352.1	-302.5	352.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50	
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00
OPER	HS20	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50	
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00
OPER	2F1	13.40 R	10.31	237.50	0.0	0.00	0.00	0.00	
		-36.82 L	-28.32	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.20 L	10.93	180.00	0.0	0.00	0.00	0.00	
		-52.98 L	-40.75	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.16 L	11.67	176.00	0.0	0.00	0.00	0.00	
		-57.40 L	-44.16	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.51 L	22.70	180.50	0.0	0.00	0.00	0.00	
		-52.22 R	-40.17	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.77	2.92	8.77	2.92	HS 58.36	105.1
HS20	14.62	4.86	14.62	4.86	HS 97.27	175.1
2F1	26.27	8.22	26.27	8.22	0.00	123.2
3F1	24.79	5.71	24.79	5.71	0.00	131.3
4F1	23.22	5.27	23.22	5.27	0.00	142.3

5C1	11.93	5.79	11.93	5.79	0.00	231.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Web Thk.		Dc	b max	b min	t	ry
21.2	19.72	0.460		9.86	8.30	8.30	0.74	1.82
				9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	216.3	-188.2	189.4	-215.0
OPER	359.4C	-314.7	314.7	-359.4C	360.4	-313.7	315.7	-358.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00			
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00	165.00		
OPER	HS20	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00			
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00	165.00		
OPER	2F1	41.15 R	31.65	240.00	0.0	0.00	0.00	0.00			
		-32.73 L	-25.17	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.00 R	39.23	244.00	0.0	0.00	0.00	0.00			
		-47.09 L	-36.22	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.64 R	36.64	248.00	0.0	0.00	0.00	0.00			
		-51.02 L	-39.25	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.64 L	45.11	183.00	0.0	0.00	0.00	0.00			
		-44.49 L	-34.22	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.38	3.75	2.96	4.28	HS 59.17	106.5
HS20	5.63	6.25	4.93	7.14	HS 98.61	177.5
2F1	8.76	9.59	7.67	10.95	0.00	115.1
3F1	7.07	6.66	6.19	7.61	0.00	142.4
4F1	7.57	6.15	6.63	7.02	0.00	166.0
5C1	6.15	7.05	5.38	8.06	0.00	215.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.7	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-84.3	74.2
OPER	171.7	-140.6	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.97	28.21	-0.74	21.70	-2.83	21.94	-2.18	16.88
OPER	HS20	-0.97	28.21	-0.74	21.70	-2.83	21.94	-2.18	16.88
OPER	2F1	-1.41	16.52	-1.08	12.70	0.00	0.00	0.00	0.00
OPER	3F1	-1.17	22.86	-0.90	17.58	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	23.47	-0.52	18.06	0.00	0.00	0.00	0.00
OPER	5C1	-2.52	21.70	-1.94	16.69	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	29.79	2.63	HS 52.59	94.7
HS20	49.64	4.38	HS 87.64	157.8
2F1	99.96	7.49	0.00	112.3
3F1	120.58	5.41	0.00	124.4
4F1	206.35	5.27	0.00	142.2
5C1	55.76	5.70	0.00	227.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 195.8	196.0	-196.8	196.0	-196.8	197.0	-195.8	197.0	-
OPER 326.3	327.3	-327.3	327.3	-327.3	328.3	-326.3	328.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00	
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00	165.00
OPER	HS20	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00	
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00	165.00
OPER	2F1	41.15 R	31.65	240.00	0.0	0.00	0.00	0.00	
		-32.73 L	-25.17	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.00 R	39.23	244.00	0.0	0.00	0.00	0.00	
		-47.09 L	-36.22	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.64 R	36.64	248.00	0.0	0.00	0.00	0.00	
		-51.02 L	-39.25	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.64 L	45.11	183.00	0.0	0.00	0.00	0.00	
		-44.49 L	-34.22	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.08	3.90	3.08	3.90	HS 61.52	110.7
HS20	5.13	6.50	5.13	6.50	HS 102.54	184.6
2F1	7.98	9.97	7.98	9.97	0.00	119.7
3F1	6.44	6.93	6.44	6.93	0.00	148.1
4F1	6.89	6.39	6.89	6.39	0.00	172.6

5C1

5.60

7.33

5.60

7.33

0.00

223.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.7	15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	205.1	-199.3	178.3	-226.2
OPER	359.4C	-314.7	314.7	-359.4C	341.9	-332.2	297.2	-376.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50			
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00		165.00	
OPER	HS20	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50			
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00		165.00	
OPER	2F1	63.34 R	48.72	242.50	0.0	0.00	0.00	0.00		0.00	
		-28.64 L	-22.03	207.50	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	81.86 R	62.97	246.50	0.0	0.00	0.00	0.00		0.00	
		-41.20 L	-31.69	205.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	83.93 R	64.56	246.50	0.0	0.00	0.00	0.00		0.00	
		-44.65 L	-34.34	202.00	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	81.12 L	62.40	185.50	0.0	0.00	0.00	0.00		0.00	
		-38.93 L	-29.94	203.00	0.0	0.00	0.00	0.00		0.00	0.00

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.06	4.54	1.79	5.15	HS 35.81	64.5
HS20	3.43	7.56	2.98	8.58	HS 59.68	107.4
2F1	5.40	11.60	4.69	13.16	0.00	70.4
3F1	4.18	8.06	3.63	9.15	0.00	83.5
4F1	4.07	7.44	3.54	8.44	0.00	95.6
5C1	4.21	8.53	3.66	9.68	0.00	146.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-83.1	75.4
OPER	171.7	-138.5	125.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.02	23.30	-2.32	17.93	-4.64	19.35	-3.57	14.89
OPER	HS20	-3.02	23.30	-2.32	17.93	-4.64	19.35	-3.57	14.89
OPER	2F1	-2.84	14.42	-2.19	11.10	0.00	0.00	0.00	0.00
OPER	3F1	-3.08	19.48	-2.37	14.98	0.00	0.00	0.00	0.00
OPER	4F1	-2.26	19.92	-1.74	15.33	0.00	0.00	0.00	0.00
OPER	5C1	-4.30	18.57	-3.31	14.29	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.90	3.24	HS 64.74	116.5
HS20	29.84	5.39	HS 107.91	194.2
2F1	48.70	8.72	0.00	130.8
3F1	44.90	6.45	0.00	148.5
4F1	61.27	6.31	0.00	170.4
5C1	32.21	6.77	0.00	270.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 206.9	203.4	-189.4	203.4	-189.4	185.9	-206.9	185.9	-
OPER 344.8	327.3	-327.3	327.3	-327.3	309.8	-344.8	309.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50	
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00	165.00
OPER	HS20	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50	
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00	165.00
OPER	2F1	63.34 R	48.72	242.50	0.0	0.00	0.00	0.00	
		-28.64 L	-22.03	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.86 R	62.97	246.50	0.0	0.00	0.00	0.00	
		-41.20 L	-31.69	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.93 R	64.56	246.50	0.0	0.00	0.00	0.00	
		-44.65 L	-34.34	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.12 L	62.40	185.50	0.0	0.00	0.00	0.00	
		-38.93 L	-29.94	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.71	1.87	4.71	HS 37.32	67.2
HS20	3.11	7.85	3.11	7.85	HS 62.21	112.0
2F1	4.89	12.04	4.89	12.04	0.00	73.4
3F1	3.78	8.37	3.78	8.37	0.00	87.0
4F1	3.69	7.72	3.69	7.72	0.00	99.6

5C1	3.82	8.86	3.82	8.86	0.00	152.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	197.1	-207.3	170.3	-234.1
OPER	359.4C	-314.7	314.7	-359.4C	328.6	-345.5	283.9	-390.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00			
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00		
OPER	HS20	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00			
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00		
OPER	2F1	77.84 R	59.88	245.00	0.0	0.00	0.00	0.00			
		-24.55 L	-18.88	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.38 R	77.22	245.00	0.0	0.00	0.00	0.00			
		-35.32 L	-27.17	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.77 R	82.90	249.00	0.0	0.00	0.00	0.00			
		-38.27 L	-29.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.68 R	75.91	247.00	0.0	0.00	0.00	0.00			
		-33.37 L	-25.67	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	5.51	1.48	6.22	HS 29.57	53.2
HS20	2.85	9.18	2.46	10.37	HS 49.28	88.7
2F1	4.22	14.08	3.65	15.90	0.00	54.7
3F1	3.27	9.78	2.83	11.05	0.00	65.0
4F1	3.05	9.03	2.63	10.20	0.00	71.1
5C1	3.33	10.36	2.88	11.70	0.00	115.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-81.8	76.7
OPER	171.7	-136.4	127.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.10	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	HS20	-6.10	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	2F1	-4.55	12.15	-3.50	9.34	0.00	0.00	0.00	0.00
OPER	3F1	-5.40	15.85	-4.15	12.19	0.00	0.00	0.00	0.00
OPER	4F1	-4.61	16.25	-3.54	12.50	0.00	0.00	0.00	0.00
OPER	5C1	-6.27	15.74	-4.82	12.11	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.12	4.22	HS 84.31	151.8
HS20	20.20	7.03	HS 140.51	252.9
2F1	29.99	10.52	0.00	157.9
3F1	25.27	8.06	0.00	185.5
4F1	29.60	7.86	0.00	212.3
5C1	21.75	8.12	0.00	324.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.9	208.7	-184.0	208.7	-184.0	177.9	-214.9	177.9	-
OPER 358.1	327.3	-327.3	327.3	-327.3	296.4	-358.1	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00	
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00
OPER	HS20	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00	
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00
OPER	2F1	77.84 R	59.88	245.00	0.0	0.00	0.00	0.00	
		-24.55 L	-18.88	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.38 R	77.22	245.00	0.0	0.00	0.00	0.00	
		-35.32 L	-27.17	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.77 R	82.90	249.00	0.0	0.00	0.00	0.00	
		-38.27 L	-29.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.68 R	75.91	247.00	0.0	0.00	0.00	0.00	
		-33.37 L	-25.67	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.54	5.71	1.54	5.71	HS 30.88	55.6
HS20	2.57	9.51	2.57	9.51	HS 51.46	92.6
2F1	3.81	14.59	3.81	14.59	0.00	57.1
3F1	2.95	10.14	2.95	10.14	0.00	67.9
4F1	2.75	9.36	2.75	9.36	0.00	74.3

5C1 3.00 10.73 3.00 10.73 0.00 120.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.26	35.26	2.861	999999.000	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fiber	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	215.6C	-188.8	188.8	-215.6C	192.3	-212.2	165.5	-239.0
OPER	359.4C	-314.7	314.7	-359.4C	320.5	-353.6	275.8	-398.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50			
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00		
OPER	HS20	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50			
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00		
OPER	2F1	82.87 R	63.75	247.50	0.0	0.00	0.00	0.00			
		-20.45 L	-15.73	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	113.10 L	87.00	227.50	0.0	0.00	0.00	0.00			
		-29.43 L	-22.64	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	120.31 R	92.55	251.50	0.0	0.00	0.00	0.00			
		-31.89 L	-24.53	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	107.92 L	83.01	225.50	0.0	0.00	0.00	0.00			
		-27.80 L	-21.39	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	+bend	-bend		
HS20	1.59	6.76	1.36	7.62	HS 27.27	49.1
HS20	2.64	11.27	2.27	12.70	HS 45.46	81.8
2F1	3.87	17.29	3.33	19.47	0.00	49.9
3F1	2.83	12.02	2.44	13.53	0.00	56.1
4F1	2.66	11.09	2.29	12.49	0.00	61.9
5C1	2.97	12.72	2.56	14.33	0.00	102.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-80.6	78.0
OPER	171.7	-134.3	129.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	15.07	-7.47	11.59	-9.15	13.93	-7.04	10.71
OPER	HS20	-9.71	15.07	-7.47	11.59	-9.15	13.93	-7.04	10.71
OPER	2F1	-6.50	9.72	-5.00	7.47	0.00	0.00	0.00	0.00
OPER	3F1	-8.09	12.69	-6.22	9.76	0.00	0.00	0.00	0.00
OPER	4F1	-7.40	12.76	-5.69	9.82	0.00	0.00	0.00	0.00
OPER	5C1	-8.38	13.46	-6.45	10.35	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.30	5.17	HS 103.48	186.3
HS20	13.84	8.62	HS 172.46	310.4
2F1	20.66	13.37	0.00	200.6
3F1	16.61	10.24	0.00	235.5
4F1	18.15	10.18	0.00	274.8
5C1	16.01	9.65	0.00	386.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 219.7	211.9	-180.8	211.9	-180.8	173.0	-219.7	173.0	-
OPER 366.2	327.3	-327.3	327.3	-327.3	288.4	-366.2	288.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50	
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00
OPER	HS20	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50	
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00
OPER	2F1	82.87 R	63.75	247.50	0.0	0.00	0.00	0.00	
		-20.45 L	-15.73	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	113.10 L	87.00	227.50	0.0	0.00	0.00	0.00	
		-29.43 L	-22.64	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	120.31 R	92.55	251.50	0.0	0.00	0.00	0.00	
		-31.89 L	-24.53	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	107.92 L	83.01	225.50	0.0	0.00	0.00	0.00	
		-27.80 L	-21.39	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	7.00	1.43	7.00	HS 28.52	51.3
HS20	2.38	11.67	2.38	11.67	HS 47.53	85.6
2F1	3.48	17.90	3.48	17.90	0.00	52.2
3F1	2.55	12.44	2.55	12.44	0.00	58.6
4F1	2.40	11.48	2.40	11.48	0.00	64.7

5C1	2.67	13.17	2.67	13.17	0.00	106.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 37.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	190.7	-213.8	163.9	-240.6
OPER	359.4C	-314.7	314.7	-359.4C	317.8	-356.3	273.1	-401.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00			
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00		
OPER	HS20	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00			
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00		
OPER	2F1	86.57 L	66.59	230.00	0.0	0.00	0.00	0.00			
		-16.36 L	-12.59	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.49 L	88.84	230.00	0.0	0.00	0.00	0.00			
		-23.54 L	-18.11	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	123.76 L	95.20	226.00	0.0	0.00	0.00	0.00			
		-25.51 L	-19.62	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	110.40 L	84.92	228.00	0.0	0.00	0.00	0.00			
		-22.24 L	-17.11	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	8.52	1.27	9.59	HS 25.47	45.9
HS20	2.47	14.20	2.12	15.98	HS 42.46	76.4
2F1	3.67	21.77	3.15	24.51	0.00	47.3
3F1	2.75	15.13	2.37	17.03	0.00	54.4
4F1	2.57	13.97	2.21	15.72	0.00	59.6
5C1	2.88	16.02	2.47	18.03	0.00	98.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-79.3	79.2
OPER	171.7	-132.1	132.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.86	11.46	-9.90	8.82	-11.81	11.17	-9.09	8.59
OPER	HS20	-12.86	11.46	-9.90	8.82	-11.81	11.17	-9.09	8.59
OPER	2F1	-8.66	7.16	-6.66	5.51	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	9.81	-8.56	7.55	0.00	0.00	0.00	0.00
OPER	4F1	-11.03	9.12	-8.49	7.01	0.00	0.00	0.00	0.00
OPER	5C1	-10.92	11.03	-8.40	8.49	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.16	6.91	HS 123.26	221.9
HS20	10.27	11.52	HS 205.43	369.8
2F1	15.26	18.43	0.00	229.0
3F1	11.87	13.46	0.00	273.1
4F1	11.98	14.49	0.00	323.3
5C1	12.10	11.97	0.00	478.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.7
Superimposed Dead Load Moment 37.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 221.3	213.0	-179.7	213.0	-179.7	171.4	-221.3	171.4	-
OPER 368.9	327.3	-327.3	327.3	-327.3	285.7	-368.9	285.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00	
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00
OPER	HS20	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00	
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00
OPER	2F1	86.57 L	66.59	230.00	0.0	0.00	0.00	0.00	0.00
		-16.36 L	-12.59	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.49 L	88.84	230.00	0.0	0.00	0.00	0.00	0.00
		-23.54 L	-18.11	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	123.76 L	95.20	226.00	0.0	0.00	0.00	0.00	0.00
		-25.51 L	-19.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	110.40 L	84.92	228.00	0.0	0.00	0.00	0.00	0.00
		-22.24 L	-17.11	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	8.82	1.33	8.82	HS 26.65	48.0
HS20	2.22	14.70	2.22	14.70	HS 44.42	79.9
2F1	3.30	22.54	3.30	22.54	0.00	49.5
3F1	2.47	15.67	2.47	15.67	0.00	56.9
4F1	2.31	14.46	2.31	14.46	0.00	62.3

5C1	2.59	16.58	2.59	16.58	0.00	103.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	Top	Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	192.2	-212.2	165.4	-239.1
OPER	359.4C	-314.7	314.7	-359.4C	320.4	-353.7	275.6	-398.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50			
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00		
OPER	HS20	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50			
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00		
OPER	2F1	82.42 L	63.40	232.50	0.0	0.00	0.00	0.00			
		-12.27 L	-9.44	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	108.61 L	83.54	228.50	0.0	0.00	0.00	0.00			
		-17.66 L	-13.58	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.35 L	87.19	228.50	0.0	0.00	0.00	0.00			
		-19.13 L	-14.72	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	105.14 L	80.88	226.50	0.0	0.00	0.00	0.00			
		-16.68 L	-12.83	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	11.28	1.29	12.70	HS 25.77	46.4
HS20	2.49	18.79	2.15	21.17	HS 42.94	77.3
2F1	3.89	28.82	3.34	32.47	0.00	50.2
3F1	2.95	20.03	2.54	22.56	0.00	58.4
4F1	2.83	18.49	2.43	20.82	0.00	65.7
5C1	3.05	21.20	2.62	23.89	0.00	104.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-1.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-78.0	80.5
OPER	171.7	-130.0	134.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.12	8.72	-13.17	6.71	-14.73	8.44	-11.33	6.49
OPER	HS20	-17.12	8.72	-13.17	6.71	-14.73	8.44	-11.33	6.49
OPER	2F1	-10.99	5.45	-8.45	4.19	0.00	0.00	0.00	0.00
OPER	3F1	-14.48	6.82	-11.14	5.25	0.00	0.00	0.00	0.00
OPER	4F1	-14.28	5.62	-10.98	4.32	0.00	0.00	0.00	0.00
OPER	5C1	-14.02	8.45	-10.78	6.50	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.56	9.23	HS 91.17	164.1
HS20	7.60	15.39	HS 151.95	273.5
2F1	11.83	24.62	0.00	177.5
3F1	8.98	19.67	0.00	206.5
4F1	9.11	23.88	0.00	245.9
5C1	9.28	15.88	0.00	371.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 219.8	212.0	-180.7	212.0	-180.7	172.9	-219.8	172.9	-
OPER 366.3	327.3	-327.3	327.3	-327.3	288.2	-366.3	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50	
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00
OPER	HS20	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50	
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00
OPER	2F1	82.42 L	63.40	232.50	0.0	0.00	0.00	0.00	
		-12.27 L	-9.44	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.61 L	83.54	228.50	0.0	0.00	0.00	0.00	
		-17.66 L	-13.58	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.35 L	87.19	228.50	0.0	0.00	0.00	0.00	
		-19.13 L	-14.72	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.14 L	80.88	226.50	0.0	0.00	0.00	0.00	
		-16.68 L	-12.83	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.35	11.68	1.35	11.68	HS 26.94	48.5
HS20	2.24	19.46	2.24	19.46	HS 44.90	80.8
2F1	3.50	29.85	3.50	29.85	0.00	52.5
3F1	2.65	20.75	2.65	20.75	0.00	61.0
4F1	2.54	19.15	2.54	19.15	0.00	68.7

5C1	2.74	21.96	2.74	21.96	0.00	109.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	196.9	-207.6	170.1	-234.4
OPER	359.4C	-314.7	314.7	-359.4C	328.1	-346.0	283.4	-390.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00			
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00		
OPER	HS20	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00			
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00		
OPER	2F1	67.32 L	51.78	235.00	0.0	0.00	0.00	0.00			
		-8.18 L	-6.29	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.43 L	69.56	231.00	0.0	0.00	0.00	0.00			
		-11.77 L	-9.06	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.74 L	69.80	227.00	0.0	0.00	0.00	0.00			
		-12.76 L	-9.81	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	87.67 L	67.44	229.00	0.0	0.00	0.00	0.00			
		-11.12 L	-8.56	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	16.54	1.56	18.68	HS 31.24	56.2
HS20	3.01	27.57	2.60	31.13	HS 52.07	93.7
2F1	4.88	42.28	4.21	47.75	0.00	63.2
3F1	3.63	29.39	3.13	33.19	0.00	72.1
4F1	3.62	27.12	3.12	30.63	0.00	84.3
5C1	3.74	31.11	3.23	35.13	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-3.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-76.8	81.8
OPER	171.7	-127.9	136.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.77	5.87	-16.75	4.52	-17.87	5.76	-13.74	4.43
OPER	HS20	-21.77	5.87	-16.75	4.52	-17.87	5.76	-13.74	4.43
OPER	2F1	-13.46	3.67	-10.36	2.82	0.00	0.00	0.00	0.00
OPER	3F1	-18.09	3.75	-13.91	2.88	0.00	0.00	0.00	0.00
OPER	4F1	-18.15	3.09	-13.96	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-17.53	5.69	-13.49	4.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.53	13.93	HS 70.51	126.9
HS20	5.88	23.21	HS 117.52	211.5
2F1	9.50	37.13	0.00	142.5
3F1	7.07	36.37	0.00	162.7
4F1	7.05	44.16	0.00	190.4
5C1	7.30	23.95	0.00	291.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 215.1	208.9	-183.9	208.9	-183.9	177.6	-215.1	177.6	-
OPER 358.5	327.3	-327.3	327.3	-327.3	296.0	-358.5	296.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00	
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00
OPER	HS20	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00	
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00
OPER	2F1	67.32 L	51.78	235.00	0.0	0.00	0.00	0.00	
		-8.18 L	-6.29	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.43 L	69.56	231.00	0.0	0.00	0.00	0.00	
		-11.77 L	-9.06	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.74 L	69.80	227.00	0.0	0.00	0.00	0.00	
		-12.76 L	-9.81	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.67 L	67.44	229.00	0.0	0.00	0.00	0.00	
		-11.12 L	-8.56	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	17.14	1.63	17.14	HS 32.63	58.7
HS20	2.72	28.57	2.72	28.57	HS 54.38	97.9
2F1	4.40	43.82	4.40	43.82	0.00	66.0
3F1	3.27	30.46	3.27	30.46	0.00	75.3
4F1	3.26	28.11	3.26	28.11	0.00	88.1

5C1	3.38	32.24	3.38	32.24	0.00	135.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
	0.00	0.00	0.00	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web		Dc	b max	b min	t	ry
	Depth	Thk.					
H	D	tw	top	9.86	8.30	8.30	0.74
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	204.7	-199.8	177.9	-226.6
OPER	359.4C	-314.7	314.7	-359.4C	341.2	-332.9	296.4	-377.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50			
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00		
OPER	HS20	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50			
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00		
OPER	2F1	40.12 L	30.86	237.50	0.0	0.00	0.00	0.00			
		-4.09 L	-3.15	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00			
		-5.89 L	-4.53	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	55.95 L	43.04	229.50	0.0	0.00	0.00	0.00			
		-6.38 L	-4.91	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	53.16 L	40.89	231.50	0.0	0.00	0.00	0.00			
		-5.56 L	-4.28	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	31.84	2.66	36.12	HS 53.16	95.7
HS20	5.10	53.07	4.43	60.19	HS 88.60	159.5
2F1	8.50	81.39	7.39	92.32	0.00	110.8
3F1	6.23	56.56	5.42	64.16	0.00	124.6
4F1	6.10	52.20	5.30	59.21	0.00	143.1
5C1	6.42	59.87	5.58	67.91	0.00	223.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.5	-5.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-75.5	83.0
OPER	171.7	-125.9	138.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-26.77	2.95	-20.59	2.27	-21.20	3.17	-16.31	2.44
OPER	HS20	-26.77	2.95	-20.59	2.27	-21.20	3.17	-16.31	2.44
OPER	2F1	-16.05	1.85	-12.34	1.42	0.00	0.00	0.00	0.00
OPER	3F1	-21.89	2.35	-16.84	1.81	0.00	0.00	0.00	0.00
OPER	4F1	-22.38	2.54	-17.22	1.96	0.00	0.00	0.00	0.00
OPER	5C1	-21.26	3.70	-16.36	2.85	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.82	26.22	HS 56.42	101.6
HS20	4.70	43.69	HS 94.04	169.3
2F1	7.84	74.96	0.00	117.6
3F1	5.75	58.76	0.00	132.2
4F1	5.62	54.43	0.00	151.8
5C1	5.92	37.40	0.00	236.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 207.3	203.7	-189.1	203.7	-189.1	185.4	-207.3	185.4	-
OPER 345.5	327.3	-327.3	327.3	-327.3	309.0	-345.5	309.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50	
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00
OPER	HS20	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50	
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00
OPER	2F1	40.12 L	30.86	237.50	0.0	0.00	0.00	0.00	
		-4.09 L	-3.15	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00	
		-5.89 L	-4.53	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.95 L	43.04	229.50	0.0	0.00	0.00	0.00	
		-6.38 L	-4.91	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.16 L	40.89	231.50	0.0	0.00	0.00	0.00	
		-5.56 L	-4.28	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.77	33.04	2.77	33.04	HS 55.42	99.8
HS20	4.62	55.07	4.62	55.07	HS 92.37	166.3
2F1	7.70	84.46	7.70	84.46	0.00	115.5
3F1	5.65	58.70	5.65	58.70	0.00	129.9
4F1	5.52	54.17	5.52	54.17	0.00	149.1

5C1 5.81 62.13 5.81 62.13 0.00 232.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section	Web							
Height	Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section	Area	Neutral Axis		Moment of Inertia	
Gross	Net	Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section
Positive Bending	Negative Bending			Modulus - Z
Top	Bott.	Top	Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
 Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.26	35.26	2.861	999999.000	95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	215.6	-188.8	188.8	-215.6
OPER	359.4C	-314.7	314.7	-359.4C	359.4	-314.7	314.7	-359.4

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S05	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.7	-7.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-74.3	79.7
OPER	171.7	-123.8	132.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.37	-19.01	1.83
OPER	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.37	-19.01	1.83
OPER	2F1	-18.71	0.00	-14.39	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-25.85	0.00	-19.89	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.84	0.00	-20.65	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	0.00	-19.35	0.00	0.00	0.00	0.00	0.00

Veh.	Rating				Load Capacity (tons)
	(-)	Factor (+)	Value	Shear	
HS20	2.32	33.58	HS 46.38	83.5	
HS20	3.87	55.97	HS 77.29	139.1	
2F1	6.62	999.00	0.00	99.2	
3F1	4.79	999.00	0.00	110.1	
4F1	4.61	999.00	0.00	124.5	
5C1	4.92	999.00	0.00	196.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 11.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 196.4	196.4	-196.4	196.4	-196.4	196.4	-196.4	196.4	-
OPER 327.3	327.3	-327.3	327.3	-327.3	327.3	-327.3	327.3	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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