

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 23.91

Comments:

Member I. D. B01 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	1.917	235.5	235.5	35.000	0.0
1	P	5.417	0.0	0.0	0.000	7.9
1	P	12.417	0.0	0.0	0.000	6.5
1	P	19.417	0.0	0.0	0.000	7.2
1	P	26.417	0.0	0.0	0.000	7.2
1	P	33.420	0.0	0.0	0.000	7.9

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	15.03	16.60	16.60	1.44	4.00
36.3	33.42	0.840	bott	18.39	16.60	16.60	1.44	4.00

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
	68.80	68.80	16.47	19.83	15040.0	15040.0
n= 8	139.41	139.41	4.45	31.85	35300.8	15040.0
3n= 24	92.34	92.34	10.42	25.88	25128.6	15040.0

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	913.1	758.5	913.1	758.5	3163.69
n= 8	7930.1	1108.4	913.1	758.5	
3n= 24	2411.3	971.0	913.1	758.5	

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	7.88	1.44	11.530	0.01	0.00	39.79	17.90
bott	8.30	1.44	11.530	84.00	21.01		21.89

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1410.882

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3163.69	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
2504.07	2836.95	8.88	0.00	0.00	0.000	4696.37

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	537.3

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 42.4
Superimposed Dead Load Moment 237.9

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.	2817.8C	-1506.6	1828.9	-1898.2C	1999.4	-1327.1	1238.6	-1628.3
OPER	4696.4C	-2510.9	3048.1	-3163.7C	3332.3	-2211.8	2064.4	-2713.9

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	851.34 R	0.00 R	654.87	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	851.34 R	0.00 R	654.87	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	485.59 R	0.00 R	373.53	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	679.55 R	0.00 R	522.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	713.59 R	0.00 R	548.92	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	660.67 R	0.00 R	508.21	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	top fiber -bend	+bend	-bend		
HS20	2.35	999.00	1.46	999.00	HS 29.10	52.4
HS20	3.91	999.00	2.42	999.00	HS 48.50	87.3
2F1	6.86	999.00	4.25	999.00	0.00	63.8
3F1	4.90	999.00	3.04	999.00	0.00	69.9
4F1	4.67	999.00	2.89	999.00	0.00	78.1
5C1	5.04	999.00	3.12	999.00	0.00	125.0

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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. B01
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 42.4
Superimposed Dead Load Moment 237.9

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. 357.2	12020.3	-1319.1	1817.6	-1076.9	11740.0	-1599.4	1537.3	-1
OPER 261.9	19846.9	-2385.4	2842.5	-1981.6	19566.6	-2665.7	2562.1	-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	851.34 R	654.87	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
OPER	HS20	851.34 R	654.87	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
OPER	2F1	485.59 R	373.53	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
OPER	3F1	679.55 R	522.73	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
OPER	4F1	713.59 R	548.92	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
OPER	5C1	660.67 R	508.21	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

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	13.79	999.00	1.81	999.00	HS 36.11	65.0
HS20	22.98	999.00	3.01	999.00	HS 60.19	108.3
2F1	40.29	999.00	5.28	999.00	0.00	79.1
3F1	28.79	999.00	3.77	999.00	0.00	86.7
4F1	27.42	999.00	3.59	999.00	0.00	96.9

5C1	29.62	999.00	3.88	999.00	0.00	155.1
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	22.6
1	P	12.417	0.0	0.0	0.000	18.6
1	P	19.417	0.0	0.0	0.000	20.6
1	P	26.417	0.0	0.0	0.000	20.6
1	P	33.420	0.0	0.0	0.000	22.6

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	
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	16.15	16.60	16.60	1.57	3.89
36.5	33.36	0.880	bott	17.21	16.60	16.60	1.57	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
	79.20	79.20	17.72	18.78	17906.1	17906.1
n= 8	232.11	232.11	1.27	35.23	51842.9	17906.1
3n= 24	130.17	130.17	7.94	28.56	37710.7	17906.1

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1010.5	953.5	1010.5	953.5	3257.15
n= 8	40809.9	1471.6	1010.5	953.5	
3n= 24	4747.7	1320.5	1010.5	953.5	

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	7.86	1.57	10.570	0.01	0.00	37.69	18.25
bott	8.30	1.57	10.570	84.00	21.59		19.45

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1233.270

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3257.15	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. B02
 Check Point I. D. 1.474
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 45.7
 Superimposed Dead Load Moment 577.4

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.	3449.6C	-1667.3	2428.1	-1954.3C	2279.7	-1656.4	1493.9	-1877.1
OPER	5749.4C	-2778.8	4046.8	-3257.2C	3799.5	-2760.6	2489.9	-3128.6

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	913.70 R	702.85	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
OPER	HS20	913.70 R	702.85	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
OPER	2F1	485.59 R	373.53	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	717.31 R	551.77	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	795.40 R	611.85	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
OPER	5C1	698.43 R	537.25	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	2.49	999.00	1.63	999.00	HS 32.70	58.9
HS20	4.16	999.00	2.72	999.00	HS 54.50	98.1
2F1	7.82	999.00	5.13	999.00	0.00	76.9
3F1	5.30	999.00	3.47	999.00	0.00	79.8
4F1	4.78	999.00	3.13	999.00	0.00	84.5
5C1	5.44	999.00	3.57	999.00	0.00	142.6

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	Dead Load Shear
0.0	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. B02
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 577.4

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. 868.4	60508.1	-1334.7	2501.4	-1245.4	59885.0	-1957.8	1878.3	-1
OPER 114.1	100431.4	-2639.9	3753.6	-2491.0	99808.3	-3262.9	3130.6	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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	65.54	999.00	2.06	999.00	HS 41.11	74.0
HS20	109.24	999.00	3.43	999.00	HS 68.52	123.3
2F1	205.54	999.00	6.45	999.00	0.00	96.7
3F1	139.14	999.00	4.36	999.00	0.00	100.4
4F1	125.48	999.00	3.94	999.00	0.00	106.3

5C1	142.90	999.00	4.48	999.00	0.00	179.3
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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. B03
 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	14.92	16.60	16.60	1.44	4.04
36.3	33.42	0.840	bott	18.50	16.60	16.60	1.44	4.04

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
	67.40	67.40	16.36	19.94	14924.9	14924.9
n= 8	220.31	220.31	0.09	36.21	42332.8	14924.9
3n= 24	118.37	118.37	6.45	29.85	31298.9	14924.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending		Negative Bending		
	Top	Bott.	Top	Bott.	
	912.5	748.3	912.5	748.3	3179.83
n= 8	480360.7	1169.0	912.5	748.3	
3n= 24	4851.1	1048.6	912.5	748.3	

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	7.88	1.44	11.530	0.01	0.00	39.79	17.76
bott	8.30	1.44	11.530	84.00	20.80		22.03

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1430.062

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3179.83	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
2504.07	5353.93	4.11	0.00	0.00	0.000	5341.08

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	537.3

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 42.4
 Superimposed Dead Load Moment 517.4

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.	3204.6C	-1505.6	1928.9	-1907.9C	2129.2	-1494.1	1147.9	-1803.5
OPER	5341.1C	-2509.4	3214.8	-3179.8C	3548.7	-2490.1	1913.1	-3005.9

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	913.70 R	702.85	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
OPER	HS20	913.70 R	702.85	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
OPER	2F1	485.59 R	373.53	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	717.31 R	551.77	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	795.40 R	611.85	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
OPER	5C1	698.43 R	537.25	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	2.33	999.00	1.26	999.00	HS 25.13	45.2
HS20	3.88	999.00	2.09	999.00	HS 41.88	75.4
2F1	7.31	999.00	3.94	999.00	0.00	59.1
3F1	4.95	999.00	2.67	999.00	0.00	61.3
4F1	4.46	999.00	2.40	999.00	0.00	64.9
5C1	5.08	999.00	2.74	999.00	0.00	109.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	B03	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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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. B03
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 42.4
Superimposed Dead Load Moment 517.4

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. 508.9	100559.8	-1206.4	2006.4	-949.1	99999.9	-1766.2	1446.6	-1
OPER 514.9	100559.8	-2383.9	2970.8	-1955.1	99999.9	-2943.7	2411.0	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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	109.44	999.00	1.58	999.00	HS 31.66	57.0
HS20	109.44	999.00	2.64	999.00	HS 52.77	95.0
2F1	205.93	999.00	4.97	999.00	0.00	74.5
3F1	139.41	999.00	3.36	999.00	0.00	77.3
4F1	125.72	999.00	3.03	999.00	0.00	81.8

5C1	143.18	999.00	3.45	999.00	0.00	138.1
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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 23.91

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	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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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. 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	15.48	16.60	16.60	1.44	3.94
36.3	33.42	0.840	bott	17.94	16.60	16.60	1.44	3.94

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
	70.80	70.80	16.92	19.38	15542.7	15542.7
n= 8	223.71	223.71	0.40	35.90	45230.3	15542.7
3n= 24	121.77	121.77	6.81	29.49	33329.7	15542.7

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending		Negative Bending		
	Top	Bott.	Top	Bott.	
	918.4	802.1	918.4	802.1	3101.32
n= 8	112579.3	1260.0	918.4	802.1	
3n= 24	4896.8	1130.1	918.4	802.1	

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	7.88	1.44	11.530	0.01	0.00	39.79	18.43
bott	8.30	1.44	11.530	84.00	21.32		21.35

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1334.176

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3101.32	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
2504.07	5353.93	4.11	0.00	0.00	0.000	5341.08

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	537.3

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 42.4
 Superimposed Dead Load Moment 517.4

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.	3204.6C	-1515.4	2078.9	-1860.8C	2129.2	-1501.6	1263.3	-1767.3
OPER	5341.1C	-2525.6	3464.9	-3101.3C	3548.7	-2502.7	2105.5	-2945.5

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	913.70 R	702.85	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
OPER	HS20	913.70 R	702.85	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
OPER	2F1	485.59 R	373.53	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	717.31 R	551.77	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	795.40 R	611.85	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
OPER	5C1	698.43 R	537.25	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	2.33	999.00	1.38	999.00	HS 27.65	49.8
HS20	3.88	999.00	2.30	999.00	HS 46.09	83.0
2F1	7.31	999.00	4.34	999.00	0.00	65.0
3F1	4.95	999.00	2.93	999.00	0.00	67.5
4F1	4.46	999.00	2.65	999.00	0.00	71.5
5C1	5.08	999.00	3.02	999.00	0.00	120.6

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
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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 42.4
Superimposed Dead Load Moment 517.4

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. 593.3	100559.8	-1215.7	2148.7	-1033.4	99999.9	-1775.5	1588.9	-1
OPER 655.4	100559.8	-2399.4	3207.9	-2095.6	99999.9	-2959.2	2648.1	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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 fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	109.44	999.00	1.74	999.00	HS 34.78	62.6
HS20	109.44	999.00	2.90	999.00	HS 57.96	104.3
2F1	205.93	999.00	5.45	999.00	0.00	81.8
3F1	139.41	999.00	3.69	999.00	0.00	84.9
4F1	125.72	999.00	3.33	999.00	0.00	89.9

5C1	143.18	999.00	3.79	999.00	0.00	151.7
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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. 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	15.72	16.60	16.60	1.44	3.92
36.3	33.42	0.840	bott	17.70	16.60	16.60	1.44	3.92

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
	71.70	71.70	17.16	19.14	15857.1	15857.1
n= 8	224.61	224.61	0.54	35.76	46355.1	15857.1
3n= 24	122.67	122.67	7.02	29.28	34079.9	15857.1

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	924.1	828.5	924.1	828.5	3068.95
n= 8	85120.2	1296.4	924.1	828.5	
3n= 24	4854.5	1163.9	924.1	828.5	

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	7.88	1.44	11.530	0.01	0.00	39.79	18.71
bott	8.30	1.44	11.530	84.00	21.46		21.07

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1291.725

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3068.95	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
2504.07	5353.93	4.11	0.00	0.00	0.000	5341.08

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	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment 42.4
 Superimposed Dead Load Moment 517.4

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.	3204.6C	-1524.7	2139.1	-1841.4C	2129.2	-1508.8	1309.6	-1752.3
OPER	5341.1C	-2541.2	3565.2	-3068.9C	3548.7	-2514.6	2182.6	-2920.6

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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.33	999.00	1.43	999.00	HS 28.67	51.6
HS20	3.88	999.00	2.39	999.00	HS 47.78	86.0
2F1	7.31	999.00	4.49	999.00	0.00	67.4
3F1	4.95	999.00	3.04	999.00	0.00	70.0
4F1	4.46	999.00	2.74	999.00	0.00	74.1
5C1	5.08	999.00	3.12	999.00	0.00	125.0

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
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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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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 42.4
Superimposed Dead Load Moment 517.4

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. 634.6	100559.8	-1224.5	2206.4	-1074.7	99999.9	-1784.4	1646.6	-1
OPER 724.3	100559.8	-2414.1	3304.1	-2164.4	99999.9	-2973.9	2744.3	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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 fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	109.44	999.00	1.80	999.00	HS 36.04	64.9
HS20	109.44	999.00	3.00	999.00	HS 60.07	108.1
2F1	205.93	999.00	5.65	999.00	0.00	84.8
3F1	139.41	999.00	3.83	999.00	0.00	88.0
4F1	125.72	999.00	3.45	999.00	0.00	93.2

5C1	143.18	999.00	3.93	999.00	0.00	157.2
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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	16.28	16.60	16.60	1.44	3.85
36.3	33.42	0.840	bott	17.14	16.60	16.60	1.44	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
	74.00	74.00	17.72	18.58	16595.9	16595.9
n= 8	226.91	226.91	0.90	35.40	49106.3	16595.9
3n= 24	124.97	124.97	7.54	28.76	35889.4	16595.9

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	936.4	893.4	936.4	893.4	2993.00
n= 8	54827.1	1387.0	936.4	893.4	
3n= 24	4760.3	1247.9	936.4	893.4	

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	7.88	1.44	11.530	0.01	0.00	39.79	19.39
bott	8.30	1.44	11.530	84.00	21.79		20.40

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1197.875

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2993.00	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
2504.07	5353.93	4.11	0.00	0.00	0.000	5341.08

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	537.3

MOMENT 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 Moment	Superimposed Dead Load Moment
42.4	517.4

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.	3204.6C	-1545.0	2288.6	-1795.8C	2129.2	-1524.4	1424.5	-1717.3
OPER	5341.1C	-2575.0	3814.3	-2993.0C	3548.7	-2540.6	2374.2	-2862.2

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	913.70 R	702.85	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
OPER	HS20	913.70 R	702.85	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
OPER	2F1	485.59 R	373.53	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	717.31 R	551.77	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	795.40 R	611.85	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
OPER	5C1	698.43 R	537.25	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	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.33	999.00	1.56	999.00	HS 31.18	56.1
HS20	3.88	999.00	2.60	999.00	HS 51.97	93.5
2F1	7.31	999.00	4.89	999.00	0.00	73.3
3F1	4.95	999.00	3.31	999.00	0.00	76.1
4F1	4.46	999.00	2.98	999.00	0.00	80.6
5C1	5.08	999.00	3.40	999.00	0.00	136.0

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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. B06
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 42.4
Superimposed Dead Load Moment 517.4

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. 736.3	81434.8	-1243.8	2349.4	-1176.5	80875.0	-1803.7	1789.5	-1
OPER 893.9	100559.8	-2446.2	3542.4	-2334.0	99999.9	-3006.1	2982.6	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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	88.51	999.00	1.96	999.00	HS 39.17	70.5
HS20	109.44	999.00	3.26	999.00	HS 65.29	117.5
2F1	205.93	999.00	6.14	999.00	0.00	92.1
3F1	139.41	999.00	4.16	999.00	0.00	95.6
4F1	125.72	999.00	3.75	999.00	0.00	101.2

5C1	143.18	999.00	4.27	999.00	0.00	170.8
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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. 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	16.26	16.60	16.60	1.44	3.86
36.3	33.42	0.840	bott	17.16	16.60	16.60	1.44	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
	73.90	73.90	17.70	18.60	16561.3	16561.3
n= 8	226.81	226.81	0.88	35.42	48966.3	16561.3
3n= 24	124.87	124.87	7.51	28.79	35799.5	16561.3

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	935.9	890.2	935.9	890.2	2996.76
n= 8	55820.0	1382.3	935.9	890.2	
3n= 24	4765.3	1243.6	935.9	890.2	

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	7.88	1.44	11.530	0.01	0.00	39.79	19.35
bott	8.30	1.44	11.530	84.00	21.78		20.43

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1202.198

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2996.76	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
2504.07	5353.93	4.11	0.00	0.00	0.000	5341.08

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	537.3

MOMENT 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 Moment 42.4
 Superimposed Dead Load Moment 517.4

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.	3204.6C	-1544.2	2280.9	-1798.1C	2129.2	-1523.8	1418.6	-1719.0
OPER	5341.1C	-2573.7	3801.4	-2996.8C	3548.7	-2539.6	2364.3	-2865.0

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	913.70 R	702.85 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	913.70 R	702.85 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	485.59 R	373.53 R	373.53	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	717.31 R	551.77 R	551.77	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	795.40 R	611.85 R	611.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	698.43 R	537.25 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00
		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	2.33	999.00	1.55	999.00	HS 31.05	55.9
HS20	3.88	999.00	2.59	999.00	HS 51.75	93.2
2F1	7.31	999.00	4.87	999.00	0.00	73.0
3F1	4.95	999.00	3.30	999.00	0.00	75.8
4F1	4.46	999.00	2.97	999.00	0.00	80.3
5C1	5.08	999.00	3.38	999.00	0.00	135.4

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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. B07
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 42.4
Superimposed Dead Load Moment 517.4

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. 731.3	82902.4	-1243.1	2342.0	-1171.4	82342.6	-1802.9	1782.2	-1
OPER 885.5	100559.8	-2445.0	3530.2	-2325.6	99999.9	-3004.9	2970.3	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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 fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	90.12	999.00	1.95	999.00	HS 39.01	70.2
HS20	109.44	999.00	3.25	999.00	HS 65.02	117.0
2F1	205.93	999.00	6.12	999.00	0.00	91.8
3F1	139.41	999.00	4.14	999.00	0.00	95.2
4F1	125.72	999.00	3.73	999.00	0.00	100.8

5C1	143.18	999.00	4.25	999.00	0.00	170.1
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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 23.91

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	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	22.6
1	P	12.417	0.0	0.0	0.000	18.6
1	P	19.417	0.0	0.0	0.000	20.6
1	P	26.417	0.0	0.0	0.000	20.6
1	P	33.420	0.0	0.0	0.000	22.6

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. 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	16.12	16.60	16.60	1.57	3.89
36.5	33.36	0.880	bott	17.24	16.60	16.60	1.57	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
	79.10	79.10	17.69	18.81	17873.2	17873.2
n= 8	232.01	232.01	1.25	35.25	51709.5	17873.2
3n= 24	130.07	130.07	7.92	28.58	37626.1	17873.2

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	1010.1	950.4	1010.1	950.4	3260.89
n= 8	41276.6	1467.1	1010.1	950.4	
3n= 24	4752.0	1316.4	1010.1	950.4	

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	7.86	1.57	10.570	0.01	0.00	37.69	18.22
bott	8.30	1.57	10.570	84.00	21.57		19.47

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1237.228

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3260.89	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	HS20	HS20
Check Point I. D.	1.474		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
45.7	577.4

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.	3449.6C	-1666.6	2420.6	-1956.5C	2279.7	-1655.9	1488.2	-1878.9
OPER	5749.4C	-2777.7	4034.4	-3260.9C	3799.5	-2759.8	2480.3	-3131.5

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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.49	999.00	1.63	999.00	HS 32.57	58.6
HS20	4.16	999.00	2.71	999.00	HS 54.29	97.7
2F1	7.82	999.00	5.11	999.00	0.00	76.6
3F1	5.30	999.00	3.46	999.00	0.00	79.5
4F1	4.78	999.00	3.12	999.00	0.00	84.2
5C1	5.44	999.00	3.55	999.00	0.00	142.1

SHEAR 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 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. B08
Check Point I. D. 1.474

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 45.7
Superimposed Dead Load Moment 577.4

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. 863.7	61195.3	-1334.1	2494.3	-1240.6	60572.2	-1957.1	1871.2	-1
OPER 106.1	100623.0	-2638.8	3741.8	-2483.0	99999.9	-3261.9	3118.7	-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	913.70	R	702.85	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
OPER	HS20	913.70	R	702.85	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
OPER	2F1	485.59	R	373.53	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	717.31	R	551.77	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	795.40	R	611.85	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
OPER	5C1	698.43	R	537.25	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 fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	66.29	999.00	2.05	999.00	HS 40.96	73.7
HS20	109.44	999.00	3.41	999.00	HS 68.27	122.9
2F1	205.93	999.00	6.42	999.00	0.00	96.3
3F1	139.41	999.00	4.35	999.00	0.00	100.0
4F1	125.72	999.00	3.92	999.00	0.00	105.9

5C1	143.18	999.00	4.47	999.00	0.00	178.6
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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 23.91

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	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	7.9
1	P	12.417	0.0	0.0	0.000	6.5
1	P	19.417	0.0	0.0	0.000	7.2
1	P	26.417	0.0	0.0	0.000	7.2
1	P	33.420	0.0	0.0	0.000	7.9

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	16.71	16.60	16.60	1.44	3.81
36.3	33.42	0.840	bott	16.71	16.60	16.60	1.44	3.81

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
	75.90	75.90	18.15	18.15	17145.4	17145.4
n= 8	146.51	146.51	5.90	30.40	41398.7	17145.4
3n= 24	99.44	99.44	12.13	24.17	28957.0	17145.4

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	944.7	944.7	944.7	944.7	2936.56
n= 8	7012.9	1361.9	944.7	944.7	
3n= 24	2386.4	1198.3	944.7	944.7	

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	7.88	1.44	11.530	0.01	0.00	39.79	19.89
bott	7.88	1.44	11.530	84.00	22.07		19.89

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1132.887

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2936.56	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
2504.07	2836.95	8.88	0.00	0.00	0.000	4766.05

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	537.3

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 Superimposed Dead Load
Moment Moment
48.5 237.9

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.	2859.6C	-1558.7	2247.2	-1761.9C	2027.9	-1370.8	1556.8	-1527.2
OPER	4766.0C	-2597.8	3745.3	-2936.6C	3379.8	-2284.7	2594.6	-2545.3

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	851.34 R	0.00 R	654.87	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	HS20	851.34 R	0.00 R	654.87	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	2F1	485.59 R	0.00 R	373.53	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	679.55 R	0.00 R	522.73	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	713.59 R	0.00 R	548.92	28.42	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	660.67 R	0.00 R	508.21	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	2.38	999.00	1.83	999.00	HS 36.57	65.8
HS20	3.97	999.00	3.05	999.00	HS 60.95	109.7
2F1	6.96	999.00	5.34	999.00	0.00	80.1
3F1	4.97	999.00	3.82	999.00	0.00	87.8
4F1	4.74	999.00	3.64	999.00	0.00	98.2
5C1	5.12	999.00	3.93	999.00	0.00	157.1

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

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

Dead Load Superimposed Dead Load
Moment Moment
48.5 237.9

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. 652.6	10643.5	-1366.2	2217.0	-1366.2	10357.1	-1652.6	1930.6	-1
OPER 754.3	17548.3	-2467.9	3504.1	-2467.9	17261.9	-2754.3	3217.7	-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	851.34	R	654.87	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	851.34	R	654.87	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	485.59	R	373.53	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	679.55	R	522.73	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	713.59	R	548.92	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	660.67	R	508.21	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	12.17	999.00	2.27	999.00	HS 45.36	81.6
HS20	20.28	999.00	3.78	999.00	HS 75.59	136.1
2F1	35.55	999.00	6.63	999.00	0.00	99.4
3F1	25.40	999.00	4.74	999.00	0.00	108.9
4F1	24.19	999.00	4.51	999.00	0.00	121.7

5C1	26.13	999.00	4.87	999.00	0.00	194.8
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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 8

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
	23.917	23.917	23.917	23.917	23.917
	Span 6	Span 7	Span 8	Span 9	Span 10
	23.917	23.917	23.917	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	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	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	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	765.0	765.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	765.0	765.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	765.0	765.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	765.0	765.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	765.0	765.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	765.0	765.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	765.0	765.0	23.917	0.0
8	P	11.958	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.000

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
0.0 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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
0.6	0.0	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.5	65.1
OPER	151.3	-124.2	108.5

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	-2.08	31.19	-1.60	24.00	-2.12	24.40	-1.63	18.77
OPER	HS20	-2.08	31.19	-1.60	24.00	-2.12	24.40	-1.63	18.77
OPER	2F1	-1.46	18.50	-1.12	14.23	0.00	0.00	0.00	0.00
OPER	3F1	-2.10	25.38	-1.61	19.53	0.00	0.00	0.00	0.00
OPER	4F1	-2.24	26.15	-1.72	20.12	0.00	0.00	0.00	0.00
OPER	5C1	-1.97	24.68	-1.52	18.98	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	35.12	2.09	HS 41.75	75.1
HS20	58.54	3.48	HS 69.58	125.2
2F1	85.04	5.87	0.00	88.0
3F1	59.28	4.28	0.00	98.3
4F1	55.45	4.15	0.00	112.0
5C1	62.97	4.40	0.00	175.9

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	-
INV. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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 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. 1.100

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.2	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	170.5	-171.0	151.4	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.0	252.3	-317.0

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	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39	
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00
OPER	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39	
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00
OPER	2F1	37.81 R	29.09	12.39	0.0	0.00	0.00	0.00	0.00
		-3.49 R	-2.69	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.17 R	39.36	16.39	0.0	0.00	0.00	0.00	0.00
		-5.01 R	-3.86	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	51.90 R	39.92	20.39	0.0	0.00	0.00	0.00	0.00
		-5.39 R	-4.15	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	49.68 R	38.22	18.39	0.0	0.00	0.00	0.00	0.00
		-4.72 R	-3.63	45.48	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	2.75	32.92	2.44	36.61	HS 48.78	87.8
HS20	4.58	54.86	4.07	61.01	HS 81.30	146.3
2F1	7.52	81.60	6.67	90.75	0.00	100.1
3F1	5.55	56.88	4.93	63.26	0.00	113.4
4F1	5.48	52.86	4.86	58.79	0.00	131.2
5C1	5.72	60.42	5.08	67.20	0.00	203.1

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.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.4

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	-3.01	25.95	-2.31	19.96	-3.12	20.89	-2.40	16.07
OPER	HS20	-3.01	25.95	-2.31	19.96	-3.12	20.89	-2.40	16.07
OPER	2F1	-1.88	15.81	-1.45	12.16	0.00	0.00	0.00	0.00
OPER	3F1	-2.10	21.40	-1.61	16.46	0.00	0.00	0.00	0.00
OPER	4F1	-2.24	21.70	-1.72	16.69	0.00	0.00	0.00	0.00
OPER	5C1	-3.43	20.77	-2.64	15.98	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.53	2.56	HS 51.11	92.0
HS20	39.22	4.26	HS 85.18	153.3
2F1	65.02	6.99	0.00	104.8
3F1	58.33	5.16	0.00	118.8
4F1	54.56	5.09	0.00	137.5
5C1	35.62	5.32	0.00	212.8

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. 1.100 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
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. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

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	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48
OPER	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48
OPER	2F1	37.81 R	29.09	12.39	0.0	0.00	0.00	0.00
		-3.49 R	-2.69	41.09	0.0	0.00	0.00	0.00
OPER	3F1	51.17 R	39.36	16.39	0.0	0.00	0.00	0.00
		-5.01 R	-3.86	43.48	0.0	0.00	0.00	0.00
OPER	4F1	51.90 R	39.92	20.39	0.0	0.00	0.00	0.00
		-5.39 R	-4.15	46.70	0.0	0.00	0.00	0.00
OPER	5C1	49.68 R	38.22	18.39	0.0	0.00	0.00	0.00
		-4.72 R	-3.63	45.48	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	34.16	2.54	34.16	HS 50.86	91.5
HS20	4.24	56.93	4.24	56.93	HS 84.76	152.6
2F1	6.96	84.67	6.96	84.67	0.00	104.3
3F1	5.14	59.02	5.14	59.02	0.00	118.2
4F1	5.07	54.85	5.07	54.85	0.00	136.8

5C1	5.29	62.69	5.29	62.69	0.00	211.7
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.200

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
2.1 26.0

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	163.6	-178.0	144.4	-197.2
OPER	300.6C	-268.7	268.7	-300.6C	272.6	-296.7	240.6	-328.7

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	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78			
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00		
OPER	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78			
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00		
OPER	2F1	63.17 R	48.59	14.78	0.0	0.00	0.00	0.00			
		-6.99 R	-5.37	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.09 R	64.69	18.78	0.0	0.00	0.00	0.00			
		-10.02 R	-7.71	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.73 R	64.41	22.78	0.0	0.00	0.00	0.00			
		-10.79 R	-8.30	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.56 R	62.74	20.78	0.0	0.00	0.00	0.00			
		-9.44 R	-7.26	45.48	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	1.63	17.13	1.44	18.98	HS 28.74	51.7
HS20	2.71	28.55	2.39	31.63	HS 47.90	86.2
2F1	4.32	42.47	3.81	47.05	0.00	57.1
3F1	3.24	29.60	2.86	32.79	0.00	65.8
4F1	3.26	27.51	2.87	30.48	0.00	77.6
5C1	3.34	31.44	2.95	34.83	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.	1.200		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 (-)	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	-5.98	21.00	-4.60	16.15	-5.74	17.56	-4.42	13.51
OPER	HS20	-5.98	21.00	-4.60	16.15	-5.74	17.56	-4.42	13.51
OPER	2F1	-3.74	13.21	-2.87	10.16	0.00	0.00	0.00	0.00
OPER	3F1	-3.70	17.58	-2.85	13.52	0.00	0.00	0.00	0.00
OPER	4F1	-3.05	17.51	-2.34	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-5.30	17.05	-4.08	13.12	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.07	3.21	HS 64.28	115.7
HS20	20.12	5.36	HS 107.13	192.8
2F1	32.19	8.52	0.00	127.8
3F1	32.51	6.40	0.00	147.2
4F1	39.47	6.43	0.00	173.5
5C1	22.69	6.60	0.00	263.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

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. 184.5	178.9	-156.4	178.9	-156.4	150.8	-184.5	150.8	-
OPER 307.5	279.4	-279.4	279.4	-279.4	251.3	-307.5	251.3	-

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	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78	
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00
OPER	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78	
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00
OPER	2F1	63.17 R	48.59	14.78	0.0	0.00	0.00	0.00	0.00
		-6.99 R	-5.37	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.09 R	64.69	18.78	0.0	0.00	0.00	0.00	0.00
		-10.02 R	-7.71	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.73 R	64.41	22.78	0.0	0.00	0.00	0.00	0.00
		-10.79 R	-8.30	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.56 R	62.74	20.78	0.0	0.00	0.00	0.00	0.00
		-9.44 R	-7.26	45.48	0.0	0.00	0.00	0.00	0.00

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	17.75	1.50	17.75	HS 30.03	54.0
HS20	2.50	29.59	2.50	29.59	HS 50.04	90.1
2F1	3.98	44.01	3.98	44.01	0.00	59.7
3F1	2.99	30.67	2.99	30.67	0.00	68.7
4F1	3.00	28.51	3.00	28.51	0.00	81.0

5C1 3.08 32.58 3.08 32.58 0.00 123.3

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.300

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.6	32.4

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	159.4	-182.2	140.2	-201.4
OPER	300.6C	-268.7	268.7	-300.6C	265.7	-303.6	233.7	-335.6

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	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18			
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00		
OPER	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18			
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00		
OPER	2F1	76.94 R	59.18	17.18	0.0	0.00	0.00	0.00	0.00		
		-10.48 R	-8.06	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.40 R	77.23	21.18	0.0	0.00	0.00	0.00	0.00		
		-15.03 R	-11.57	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	103.93 R	79.95	21.18	0.0	0.00	0.00	0.00	0.00		
		-16.18 R	-12.44	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.36 R	74.90	23.18	0.0	0.00	0.00	0.00	0.00		
		-14.15 R	-10.89	45.48	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	11.69	1.19	12.92	HS 23.79	42.8
HS20	2.25	19.48	1.98	21.53	HS 39.64	71.4
2F1	3.45	28.97	3.04	32.03	0.00	45.6
3F1	2.65	20.19	2.33	22.32	0.00	53.5
4F1	2.56	18.77	2.25	20.75	0.00	60.7
5C1	2.73	21.45	2.40	23.71	0.00	96.0

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.	1.300		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	114.5

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	-8.87	16.43	-6.82	12.64	-8.45	14.43	-6.50	11.10
OPER	HS20	-8.87	16.43	-6.82	12.64	-8.45	14.43	-6.50	11.10
OPER	2F1	-5.54	10.72	-4.27	8.25	0.00	0.00	0.00	0.00
OPER	3F1	-6.83	13.99	-5.25	10.76	0.00	0.00	0.00	0.00
OPER	4F1	-5.62	13.81	-4.33	10.62	0.00	0.00	0.00	0.00
OPER	5C1	-8.09	13.57	-6.22	10.44	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.00	4.18	HS 83.60	150.5
HS20	13.33	6.97	HS 139.34	250.8
2F1	21.33	10.68	0.00	160.1
3F1	17.32	8.18	0.00	188.1
4F1	21.03	8.29	0.00	223.8
5C1	14.62	8.44	0.00	337.4

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.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.6	32.4

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. 188.6	181.6	-153.6	181.6	-153.6	146.7	-188.6	146.7	-
OPER 314.4	279.4	-279.4	279.4	-279.4	244.4	-314.4	244.4	-

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	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18	
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00
OPER	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18	
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00
OPER	2F1	76.94 R	59.18	17.18	0.0	0.00	0.00	0.00	
		-10.48 R	-8.06	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.40 R	77.23	21.18	0.0	0.00	0.00	0.00	
		-15.03 R	-11.57	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	103.93 R	79.95	21.18	0.0	0.00	0.00	0.00	
		-16.18 R	-12.44	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.36 R	74.90	23.18	0.0	0.00	0.00	0.00	
		-14.15 R	-10.89	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.24	12.10	1.24	12.10	HS 24.88	44.8
HS20	2.07	20.17	2.07	20.17	HS 41.47	74.6
2F1	3.18	30.00	3.18	30.00	0.00	47.7
3F1	2.43	20.91	2.43	20.91	0.00	56.0
4F1	2.35	19.43	2.35	19.43	0.00	63.5

5C1	2.51	22.21	2.51	22.21	0.00	100.4
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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 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. 1.400

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 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.	180.4C	-161.2	161.2	-180.4C	158.1	-183.5	138.9	-202.7
OPER	300.6C	-268.7	268.7	-300.6C	263.5	-305.8	231.5	-337.8

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	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57			
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00		
OPER	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57			
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00		
OPER	2F1	80.34 R	61.80	19.57	0.0	0.00	0.00	0.00			
		-13.97 R	-10.75	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	106.14 R	81.65	19.57	0.0	0.00	0.00	0.00			
		-20.05 R	-15.42	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.24 R	87.11	23.57	0.0	0.00	0.00	0.00			
		-21.57 R	-16.59	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	101.57 L	78.13	-37.43	0.0	0.00	0.00	0.00			
		-18.87 R	-14.52	45.48	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	1.34	8.83	1.18	9.75	HS 23.58	42.4
HS20	2.24	14.72	1.97	16.25	HS 39.30	70.7
2F1	3.28	21.89	2.88	24.18	0.00	43.2
3F1	2.48	15.26	2.18	16.85	0.00	50.2
4F1	2.33	14.18	2.04	15.66	0.00	55.2
5C1	2.59	16.21	2.28	17.90	0.00	91.2

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.	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.	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	-11.85	12.31	-9.12	9.47	-11.20	11.52	-8.62	8.86
OPER	HS20	-11.85	12.31	-9.12	9.47	-11.20	11.52	-8.62	8.86
OPER	2F1	-7.28	8.40	-5.60	6.46	0.00	0.00	0.00	0.00
OPER	3F1	-9.87	10.69	-7.59	8.22	0.00	0.00	0.00	0.00
OPER	4F1	-8.99	10.58	-6.91	8.14	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.62	-8.45	8.17	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.89	5.67	HS 113.48	204.3
HS20	9.81	9.46	HS 189.14	340.5
2F1	15.97	13.87	0.00	208.0
3F1	11.78	10.90	0.00	250.6
4F1	12.94	11.01	0.00	297.3
5C1	10.59	10.97	0.00	423.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment 2.8
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. 189.9	182.5	-152.8	182.5	-152.8	145.3	-189.9	145.3	-
OPER 316.6	279.4	-279.4	279.4	-279.4	242.2	-316.6	242.2	-

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	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57	
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00
OPER	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57	
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00
OPER	2F1	80.34 R	61.80	19.57	0.0	0.00	0.00	0.00	
		-13.97 R	-10.75	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	106.14 R	81.65	19.57	0.0	0.00	0.00	0.00	
		-20.05 R	-15.42	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.24 R	87.11	23.57	0.0	0.00	0.00	0.00	
		-21.57 R	-16.59	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	101.57 L	78.13	-37.43	0.0	0.00	0.00	0.00	
		-18.87 R	-14.52	45.48	0.0	0.00	0.00	0.00	0.00

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	9.14	1.23	9.14	HS 24.68	44.4
HS20	2.06	15.23	2.06	15.23	HS 41.13	74.0
2F1	3.02	22.66	3.02	22.66	0.00	45.2
3F1	2.28	15.79	2.28	15.79	0.00	52.5
4F1	2.14	14.68	2.14	14.68	0.00	57.8

5C1	2.38	16.77	2.38	16.77	0.00	95.4
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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 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. 1.500

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 2.6
 Superimposed Dead Load Moment 32.1

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	159.6	-182.0	140.4	-201.2
OPER	300.6C	-268.7	268.7	-300.6C	266.0	-303.3	234.0	-335.3

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	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96			
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00		
OPER	HS20	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96			
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00		
OPER	2F1	76.34 L	58.72	1.96	0.0	0.00	0.00	0.00			
		-17.47 R	-13.44	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	103.45 R	79.57	21.96	0.0	0.00	0.00	0.00			
		-25.06 R	-19.28	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	110.49 L	84.99	-2.04	0.0	0.00	0.00	0.00			
		-26.96 R	-20.74	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.72 L	75.94	-39.04	0.0	0.00	0.00	0.00			
		-23.59 R	-18.15	45.48	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	1.40	7.01	1.24	7.74	HS 24.72	44.5
HS20	2.34	11.67	2.06	12.90	HS 41.20	74.2
2F1	3.48	17.36	3.07	19.20	0.00	46.0
3F1	2.57	12.10	2.26	13.38	0.00	52.0
4F1	2.41	11.25	2.12	12.44	0.00	57.2
5C1	2.69	12.86	2.37	14.21	0.00	94.8

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.	1.500		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	71.0
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	-15.37	9.50	-11.82	7.31	-13.95	8.87	-10.73	6.82
OPER	HS20	-15.37	9.50	-11.82	7.31	-13.95	8.87	-10.73	6.82
OPER	2F1	-9.69	6.27	-7.46	4.82	0.00	0.00	0.00	0.00
OPER	3F1	-12.78	7.72	-9.83	5.94	0.00	0.00	0.00	0.00
OPER	4F1	-12.69	7.00	-9.76	5.39	0.00	0.00	0.00	0.00
OPER	5C1	-13.24	8.24	-10.19	6.34	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.46	7.48	HS 89.27	160.7
HS20	7.44	12.47	HS 148.78	267.8
2F1	11.80	18.90	0.00	176.9
3F1	8.95	15.35	0.00	205.8
4F1	9.01	16.91	0.00	243.2
5C1	8.63	14.37	0.00	345.3

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 2.6
Superimposed Dead Load Moment 32.1

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. 188.4	181.5	-153.8	181.5	-153.8	146.9	-188.4	146.9	-
OPER 314.0	279.4	-279.4	279.4	-279.4	244.8	-314.0	244.8	-

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	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96	
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00
OPER	HS20	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96	
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00
OPER	2F1	76.34 L	58.72	1.96	0.0	0.00	0.00	0.00	
		-17.47 R	-13.44	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	103.45 R	79.57	21.96	0.0	0.00	0.00	0.00	
		-25.06 R	-19.28	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	110.49 L	84.99	-2.04	0.0	0.00	0.00	0.00	
		-26.96 R	-20.74	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.72 L	75.94	-39.04	0.0	0.00	0.00	0.00	
		-23.59 R	-18.15	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.29	7.25	1.29	7.25	HS 25.86	46.5
HS20	2.15	12.09	2.15	12.09	HS 43.10	77.6
2F1	3.21	17.98	3.21	17.98	0.00	48.1
3F1	2.37	12.53	2.37	12.53	0.00	54.4
4F1	2.21	11.65	2.21	11.65	0.00	59.8

5C1	2.48	13.31	2.48	13.31	0.00	99.2
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.600

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.0	25.2

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	164.1	-177.5	144.9	-196.7
OPER	300.6C	-268.7	268.7	-300.6C	273.4	-295.9	241.4	-327.9

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	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35			
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00		
OPER	HS20	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35			
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00		
OPER	2F1	71.28 L	54.83	4.35	0.0	0.00	0.00	0.00			
		-20.96 R	-16.12	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.46 L	69.58	4.35	0.0	0.00	0.00	0.00			
		-30.07 R	-23.13	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.53 L	74.25	0.35	0.0	0.00	0.00	0.00			
		-32.36 R	-24.89	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.45 L	69.58	2.35	0.0	0.00	0.00	0.00			
		-28.31 R	-21.78	45.48	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	5.69	1.40	6.31	HS 28.03	50.5
HS20	2.64	9.49	2.34	10.52	HS 46.71	84.1
2F1	3.84	14.12	3.39	15.64	0.00	50.8
3F1	3.02	9.84	2.67	10.90	0.00	61.4
4F1	2.83	9.14	2.50	10.13	0.00	67.5
5C1	3.02	10.45	2.67	11.58	0.00	106.8

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
-0.3	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.3
OPER	151.3	-112.3	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	-18.34	6.62	-14.11	5.09	-16.67	6.50	-12.83	5.00
OPER	HS20	-18.34	6.62	-14.11	5.09	-16.67	6.50	-12.83	5.00
OPER	2F1	-12.14	4.36	-9.34	3.36	0.00	0.00	0.00	0.00
OPER	3F1	-15.69	5.11	-12.07	3.93	0.00	0.00	0.00	0.00
OPER	4F1	-16.29	4.32	-12.53	3.33	0.00	0.00	0.00	0.00
OPER	5C1	-15.87	6.05	-12.21	4.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.67	10.91	HS 73.45	132.2
HS20	6.12	18.19	HS 122.41	220.3
2F1	9.24	27.61	0.00	138.7
3F1	7.16	23.58	0.00	164.6
4F1	6.89	27.86	0.00	186.1
5C1	7.07	19.90	0.00	282.9

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. 1.600 2F1
3F1
4F1
5C1

Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

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. 184.0	178.5	-156.8	178.5	-156.8	151.3	-184.0	151.3	-
OPER 306.6	279.4	-279.4	279.4	-279.4	252.2	-306.6	252.2	-

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	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35	
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00
OPER	HS20	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35	
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00
OPER	2F1	71.28 L	54.83	4.35	0.0	0.00	0.00	0.00	
		-20.96 R	-16.12	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.46 L	69.58	4.35	0.0	0.00	0.00	0.00	
		-30.07 R	-23.13	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.53 L	74.25	0.35	0.0	0.00	0.00	0.00	
		-32.36 R	-24.89	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.45 L	69.58	2.35	0.0	0.00	0.00	0.00	
		-28.31 R	-21.78	45.48	0.0	0.00	0.00	0.00	0.00

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	5.90	1.46	5.90	HS 29.28	52.7
HS20	2.44	9.84	2.44	9.84	HS 48.79	87.8
2F1	3.54	14.63	3.54	14.63	0.00	53.1
3F1	2.79	10.20	2.79	10.20	0.00	64.1
4F1	2.61	9.48	2.61	9.48	0.00	70.5

5C1	2.79	10.83	2.79	10.83	0.00	111.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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. 1.700

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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.	1.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.1	14.0

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	171.3	-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	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74			
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32		
OPER	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74			
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32		
OPER	2F1	57.25 L	44.04	6.74	0.0	0.00	0.00	0.00			
		-24.45 R	-18.81	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	72.90 L	56.08	2.74	0.0	0.00	0.00	0.00			
		-35.08 R	-26.99	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.89 L	56.84	2.74	0.0	0.00	0.00	0.00			
		-37.75 R	-29.04	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	75.15 R	57.80	63.74	0.0	0.00	0.00	0.00			
		-33.03 R	-25.40	45.48	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	1.93	4.68	1.71	5.21	HS 34.24	61.6
HS20	3.21	7.80	2.85	8.68	HS 57.06	102.7
2F1	4.99	11.60	4.43	12.91	0.00	66.4
3F1	3.92	8.09	3.48	9.00	0.00	80.0
4F1	3.87	7.52	3.43	8.36	0.00	92.7
5C1	3.80	8.59	3.38	9.56	0.00	135.0

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.	1.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-66.2	73.5
OPER	151.3	-110.3	122.4

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	-22.80	2.98	-17.54	2.29	-19.32	4.42	-14.86	3.40
OPER	HS20	-22.80	2.98	-17.54	2.29	-19.32	4.42	-14.86	3.40
OPER	2F1	-14.43	2.72	-11.10	2.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.35	2.89	-14.88	2.22	0.00	0.00	0.00	0.00
OPER	4F1	-19.93	2.11	-15.33	1.62	0.00	0.00	0.00	0.00
OPER	5C1	-18.62	4.05	-14.33	3.12	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.90	16.61	HS 58.05	104.5
HS20	4.84	27.69	HS 96.75	174.2
2F1	7.64	45.09	0.00	114.6
3F1	5.70	42.40	0.00	131.1
4F1	5.53	58.14	0.00	149.4
5C1	5.92	30.20	0.00	236.9

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. 1.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.0

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. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	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 Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74	
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32
OPER	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74	
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32
OPER	2F1	57.25 L	44.04	6.74	0.0	0.00	0.00	0.00	
		-24.45 R	-18.81	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	72.90 L	56.08	2.74	0.0	0.00	0.00	0.00	
		-35.08 R	-26.99	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.89 L	56.84	2.74	0.0	0.00	0.00	0.00	
		-37.75 R	-29.04	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	75.15 R	57.80	63.74	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.86	1.78	4.86	HS 35.69	64.2
HS20	2.97	8.10	2.97	8.10	HS 59.48	107.1
2F1	4.62	12.04	4.62	12.04	0.00	69.3
3F1	3.63	8.39	3.63	8.39	0.00	83.4
4F1	3.58	7.80	3.58	7.80	0.00	96.6

5C1	3.52	8.92	3.52	8.92	0.00	140.7
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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	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.800

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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.	1.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.7

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	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 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	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	HS20	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	2F1	36.13 L	27.79	9.13	0.0	0.00	0.00	0.00	
		-27.95 R	-21.50	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	43.45 L	33.43	5.13	0.0	0.00	0.00	0.00	
		-40.09 R	-30.84	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	39.68 L	30.52	1.13	0.0	0.00	0.00	0.00	
		-43.14 R	-33.19	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.33 R	40.25	66.13	0.0	0.00	0.00	0.00	
		-37.74 R	-29.03	45.48	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	3.27	3.85	2.93	4.31	HS 58.55	105.4
HS20	5.46	6.42	4.88	7.19	HS 97.58	175.6
2F1	8.37	9.55	7.49	10.69	0.00	112.3
3F1	6.96	6.66	6.22	7.45	0.00	143.2
4F1	7.62	6.18	6.82	6.93	0.00	167.0
5C1	5.78	7.07	5.17	7.92	0.00	206.8

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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-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	-27.72	1.03	-21.32	0.79	-21.85	2.66	-16.81	2.05
OPER	HS20	-27.72	1.03	-21.32	0.79	-21.85	2.66	-16.81	2.05
OPER	2F1	-16.52	1.34	-12.71	1.03	0.00	0.00	0.00	0.00
OPER	3F1	-22.74	1.08	-17.49	0.83	0.00	0.00	0.00	0.00
OPER	4F1	-23.19	0.60	-17.84	0.46	0.00	0.00	0.00	0.00
OPER	5C1	-21.45	2.30	-16.50	1.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.34	28.04	HS 46.89	84.4
HS20	3.91	46.74	HS 78.15	140.7
2F1	6.56	93.05	0.00	98.4
3F1	4.76	115.55	0.00	109.6
4F1	4.67	207.28	0.00	126.1
5C1	5.05	54.06	0.00	202.0

SERVICEABILITY 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 Moment -0.2
Superimposed Dead Load Moment -1.7

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. 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 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	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	HS20	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	2F1	36.13 L	27.79	9.13	0.0	0.00	0.00	0.00	
		-27.95 R	-21.50	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	43.45 L	33.43	5.13	0.0	0.00	0.00	0.00	
		-40.09 R	-30.84	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	39.68 L	30.52	1.13	0.0	0.00	0.00	0.00	
		-43.14 R	-33.19	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.33 R	40.25	66.13	0.0	0.00	0.00	0.00	
		-37.74 R	-29.03	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	4.01	3.04	4.01	HS 60.88	109.6
HS20	5.07	6.68	5.07	6.68	HS 101.46	182.6
2F1	7.78	9.93	7.78	9.93	0.00	116.8
3F1	6.47	6.92	6.47	6.92	0.00	148.9
4F1	7.09	6.43	7.09	6.43	0.00	173.7

5C1

5.37

7.35

5.37

7.35

0.00

215.0

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.900

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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.	1.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.8	-21.7

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	194.4	-147.1	175.3	-166.3
OPER	300.6C	-268.7	268.7	-300.6C	324.1	-245.2	292.1	-277.2

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	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53			
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57		
OPER	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53			
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57		
OPER	2F1	10.13 L	7.79	11.53	0.0	0.00	0.00	0.00			
		-31.44 R	-24.18	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.09 R	9.30	67.40	0.0	0.00	0.00	0.00			
		-45.10 R	-34.70	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	12.85 R	9.88	71.40	0.0	0.00	0.00	0.00			
		-48.53 R	-37.33	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.75 R	18.27	68.53	0.0	0.00	0.00	0.00			
		-43.84 L	-33.72	-11.12	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	9.44	2.71	8.51	3.06	HS 54.18	97.5
HS20	15.74	4.51	14.19	5.10	HS 90.30	162.5
2F1	32.01	7.80	28.85	8.82	0.00	117.0
3F1	26.82	5.44	24.17	6.15	0.00	125.0
4F1	25.22	5.05	22.73	5.71	0.00	136.4
5C1	13.65	5.59	12.30	6.32	0.00	223.8

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 Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.8	-9.3	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-63.8	75.8
OPER	151.3	-106.3	126.4

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	-32.21	0.56	-24.77	0.43	-24.21	1.24	-18.62	0.95
OPER	HS20	-32.21	0.56	-24.77	0.43	-24.21	1.24	-18.62	0.95
OPER	2F1	-18.37	0.39	-14.13	0.30	0.00	0.00	0.00	0.00
OPER	3F1	-25.81	0.56	-19.86	0.43	0.00	0.00	0.00	0.00
OPER	4F1	-26.99	0.60	-20.76	0.46	0.00	0.00	0.00	0.00
OPER	5C1	-24.44	0.85	-18.80	0.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.98	61.26	HS 39.62	71.3
HS20	3.30	102.10	HS 66.04	118.9
2F1	5.79	322.96	0.00	86.9
3F1	4.12	225.12	0.00	94.8
4F1	3.94	210.57	0.00	106.4
5C1	4.35	149.04	0.00	174.1

SERVICEABILITY 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 Moment -1.8
Superimposed Dead Load Moment -21.7

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. 153.6	158.3	-177.0	158.3	-177.0	181.7	-153.6	181.7	-
OPER 256.0	279.4	-279.4	279.4	-279.4	302.8	-256.0	302.8	-

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	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53	
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57
OPER	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53	
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57
OPER	2F1	10.13 L	7.79	11.53	0.0	0.00	0.00	0.00	
		-31.44 R	-24.18	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.09 R	9.30	67.40	0.0	0.00	0.00	0.00	
		-45.10 R	-34.70	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	12.85 R	9.88	71.40	0.0	0.00	0.00	0.00	
		-48.53 R	-37.33	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.75 R	18.27	68.53	0.0	0.00	0.00	0.00	
		-43.84 L	-33.72	-11.12	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.83	2.83	8.83	2.83	HS 56.56	101.8
HS20	14.71	4.71	14.71	4.71	HS 94.26	169.7
2F1	29.91	8.14	29.91	8.14	0.00	122.1
3F1	25.06	5.68	25.06	5.68	0.00	130.5
4F1	23.57	5.27	23.57	5.27	0.00	142.4

5C1	12.75	5.84	12.75	5.84	0.00	233.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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
-3.8 -46.0

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	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40			
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48		
OPER	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40			
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48		
OPER	2F1	9.36 R	7.20	65.01	0.0	0.00	0.00	0.00			
		-46.29 L	-35.61	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.43 R	10.33	67.40	0.0	0.00	0.00	0.00			
		-68.97 R	-53.05	28.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.45 R	11.12	70.62	0.0	0.00	0.00	0.00			
		-82.51 R	-63.47	28.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	11.70 R	9.00	106.79	0.0	0.00	0.00	0.00			
		-73.05 R	-56.19	28.74	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	15.10	1.30	13.72	1.49	HS 26.03	46.8
HS20	25.17	2.17	22.87	2.49	HS 43.38	78.1
2F1	37.44	4.73	34.02	5.42	0.00	70.9
3F1	26.10	3.17	23.71	3.64	0.00	73.0
4F1	24.25	2.65	22.04	3.04	0.00	71.6
5C1	29.96	3.00	27.23	3.43	0.00	119.8

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	-0.9	-9.3	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-62.6	63.5
OPER	151.3	-104.4	105.9

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	-32.21	33.50	-24.77	25.77	-24.21	26.13	-18.62	20.10
OPER	HS20	-32.21	33.50	-24.77	25.77	-24.21	26.13	-18.62	20.10
OPER	2F1	-18.37	19.03	-14.13	14.64	0.00	0.00	0.00	0.00
OPER	3F1	-25.81	26.83	-19.86	20.64	0.00	0.00	0.00	0.00
OPER	4F1	-26.99	28.20	-20.76	21.69	0.00	0.00	0.00	0.00
OPER	5C1	-24.44	25.99	-18.80	19.99	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.90	HS 34.61	62.3
HS20	2.88	3.16	HS 57.68	103.8
2F1	5.23	5.56	0.00	78.5
3F1	3.66	3.95	0.00	84.2
4F1	3.43	3.76	0.00	92.5
5C1	3.85	4.07	0.00	153.9

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. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -46.0

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. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	2F1	9.36 R	7.20	65.01	0.0	0.00	0.00	0.00	
		-46.29 L	-35.61	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.43 R	10.33	67.40	0.0	0.00	0.00	0.00	
		-68.97 R	-53.05	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.45 R	11.12	70.62	0.0	0.00	0.00	0.00	
		-82.51 R	-63.47	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	11.70 R	9.00	106.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.1
HS20	23.65	2.28	23.65	2.28	HS 45.51	81.9
2F1	35.17	4.96	35.17	4.96	0.00	74.4
3F1	24.51	3.33	24.51	3.33	0.00	76.6
4F1	22.78	2.78	22.78	2.78	0.00	75.1

5C1	28.14	3.14	28.14	3.14	0.00	125.7
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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 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. 2.000

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-3.8	-46.0

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	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	2F1	9.36 R	7.20	65.01	0.0	0.00	0.00	0.00	
		-46.29 L	-35.61	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.43 R	10.33	67.40	0.0	0.00	0.00	0.00	
		-68.97 R	-53.05	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.45 R	11.12	70.62	0.0	0.00	0.00	0.00	
		-82.51 R	-63.47	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	11.70 R	9.00	106.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	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	15.10	1.30	13.72	1.49	HS 26.03	46.8
HS20	25.17	2.17	22.87	2.49	HS 43.38	78.1
2F1	37.44	4.73	34.02	5.42	0.00	70.9
3F1	26.10	3.17	23.71	3.64	0.00	73.0
4F1	24.25	2.65	22.04	3.04	0.00	71.6
5C1	29.96	3.00	27.23	3.43	0.00	119.8

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	0.8	-11.1	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-62.6	63.5
OPER	151.3	-104.4	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	-36.19	33.50	-27.84	25.77	-26.36	26.13	-20.28	20.10
OPER	HS20	-36.19	33.50	-27.84	25.77	-26.36	26.13	-20.28	20.10
OPER	2F1	-19.94	19.03	-15.34	14.64	0.00	0.00	0.00	0.00
OPER	3F1	-28.51	26.83	-21.93	20.64	0.00	0.00	0.00	0.00
OPER	4F1	-30.46	28.20	-23.43	21.69	0.00	0.00	0.00	0.00
OPER	5C1	-27.13	25.99	-20.87	19.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.73	1.90	HS 34.61	62.3
HS20	2.88	3.16	HS 57.68	103.8
2F1	5.23	5.56	0.00	78.5
3F1	3.66	3.95	0.00	84.2
4F1	3.43	3.76	0.00	92.5
5C1	3.85	4.07	0.00	153.9

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. 2.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -46.0

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. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	2F1	9.36 R	7.20	65.01	0.0	0.00	0.00	0.00	
		-46.29 L	-35.61	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.43 R	10.33	67.40	0.0	0.00	0.00	0.00	
		-68.97 R	-53.05	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.45 R	11.12	70.62	0.0	0.00	0.00	0.00	
		-82.51 R	-63.47	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	11.70 R	9.00	106.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.1
HS20	23.65	2.28	23.65	2.28	HS 45.51	81.9
2F1	35.17	4.96	35.17	4.96	0.00	74.4
3F1	24.51	3.33	24.51	3.33	0.00	76.6
4F1	22.78	2.78	22.78	2.78	0.00	75.1

5C1	28.14	3.14	28.14	3.14	0.00	125.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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 Moment Superimposed Dead Load Moment
 -2.1 -25.0

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	196.6	-144.9	177.4	-164.1
OPER	300.6C	-268.7	268.7	-300.6C	327.7	-241.6	295.7	-273.6

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	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31			
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27		
OPER	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31			
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27		
OPER	2F1	14.70 R	11.31	36.31	0.0	0.00	0.00	0.00			
		-40.42 L	-31.10	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.74 R	9.80	40.31	0.0	0.00	0.00	0.00			
		-57.83 L	-44.49	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	7.14 R	5.49	71.40	0.0	0.00	0.00	0.00			
		-61.98 L	-47.68	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	21.24 R	16.34	77.31	0.0	0.00	0.00	0.00			
		-53.16 L	-40.89	-2.43	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	9.19	2.14	8.30	2.42	HS 42.84	77.1
HS20	15.32	3.57	13.82	4.04	HS 71.39	128.5
2F1	22.30	5.98	20.12	6.77	0.00	89.6
3F1	25.73	4.18	23.22	4.73	0.00	96.1
4F1	45.91	3.90	41.43	4.41	0.00	105.2
5C1	15.43	4.55	13.93	5.15	0.00	181.8

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.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.9	64.7
OPER	151.3	-124.9	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	-2.79	29.37	-2.15	22.59	-2.89	23.54	-2.22	18.11
OPER	HS20	-2.79	29.37	-2.15	22.59	-2.89	23.54	-2.22	18.11
OPER	2F1	-1.96	17.21	-1.51	13.24	0.00	0.00	0.00	0.00
OPER	3F1	-2.81	23.73	-2.16	18.25	0.00	0.00	0.00	0.00
OPER	4F1	-3.00	24.50	-2.31	18.84	0.00	0.00	0.00	0.00
OPER	5C1	-2.86	22.95	-2.20	17.65	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.95	2.20	HS 44.07	79.3
HS20	43.25	3.67	HS 73.45	132.2
2F1	63.81	6.27	0.00	94.0
3F1	44.48	4.55	0.00	104.6
4F1	41.61	4.40	0.00	118.9
5C1	43.65	4.70	0.00	188.0

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. 2.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.1 -25.0

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. 151.4	156.8	-178.5	156.8	-178.5	183.9	-151.4	183.9	-
OPER 252.3	279.4	-279.4	279.4	-279.4	306.5	-252.3	306.5	-

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	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31	
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27
OPER	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31	
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27
OPER	2F1	14.70 R	11.31	36.31	0.0	0.00	0.00	0.00	
		-40.42 L	-31.10	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.74 R	9.80	40.31	0.0	0.00	0.00	0.00	
		-57.83 L	-44.49	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	7.14 R	5.49	71.40	0.0	0.00	0.00	0.00	
		-61.98 L	-47.68	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.24 R	16.34	77.31	0.0	0.00	0.00	0.00	
		-53.16 L	-40.89	-2.43	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.60	2.24	8.60	2.24	HS 44.74	80.5
HS20	14.33	3.73	14.33	3.73	HS 74.57	134.2
2F1	20.85	6.24	20.85	6.24	0.00	93.6
3F1	24.06	4.36	24.06	4.36	0.00	100.3
4F1	42.93	4.07	42.93	4.07	0.00	109.9

5C1	14.43	4.75	14.43	4.75	0.00	189.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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
-0.7	-8.4

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	185.8	-155.7	166.7	-174.9
OPER	300.6C	-268.7	268.7	-300.6C	309.7	-259.5	277.8	-291.5

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	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70			
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27		
OPER	HS20	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70			
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27		
OPER	2F1	38.43 R	29.56	38.70	0.0	0.00	0.00	0.00			
		-34.55 L	-26.58	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.95 R	36.12	42.70	0.0	0.00	0.00	0.00			
		-49.43 L	-38.03	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.48 R	33.45	46.70	0.0	0.00	0.00	0.00			
		-52.98 L	-40.76	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.63 R	35.87	44.70	0.0	0.00	0.00	0.00			
		-46.11 L	-35.47	2.35	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	3.13	2.78	2.80	3.13	HS 55.68	100.2
HS20	5.21	4.64	4.67	5.21	HS 92.80	167.0
2F1	8.06	7.51	7.23	8.44	0.00	108.4
3F1	6.60	5.25	5.92	5.90	0.00	120.8
4F1	7.12	4.90	6.39	5.50	0.00	132.3
5C1	6.64	5.63	5.96	6.32	0.00	225.1

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.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	6.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.7	65.9
OPER	151.3	-122.9	109.8

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	-2.79	24.68	-2.15	18.98	-4.29	20.73	-3.30	15.95
OPER	HS20	-2.79	24.68	-2.15	18.98	-4.29	20.73	-3.30	15.95
OPER	2F1	-1.96	14.96	-1.51	11.51	0.00	0.00	0.00	0.00
OPER	3F1	-2.81	20.22	-2.16	15.55	0.00	0.00	0.00	0.00
OPER	4F1	-3.00	20.97	-2.31	16.13	0.00	0.00	0.00	0.00
OPER	5C1	-4.45	19.53	-3.42	15.03	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.18	2.67	HS 53.41	96.1
HS20	28.64	4.45	HS 89.02	160.2
2F1	62.80	7.34	0.00	110.1
3F1	43.78	5.43	0.00	125.0
4F1	40.95	5.24	0.00	141.4
5C1	27.61	5.62	0.00	224.9

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 Moment Superimposed Dead Load Moment
-0.7 -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. 162.2	164.0	-171.3	164.0	-171.3	173.1	-162.2	173.1	-
OPER 270.3	279.4	-279.4	279.4	-279.4	288.5	-270.3	288.5	-

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	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70	
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27
OPER	HS20	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70	
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27
OPER	2F1	38.43 R	29.56	38.70	0.0	0.00	0.00	0.00	
		-34.55 L	-26.58	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.95 R	36.12	42.70	0.0	0.00	0.00	0.00	
		-49.43 L	-38.03	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.48 R	33.45	46.70	0.0	0.00	0.00	0.00	
		-52.98 L	-40.76	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.63 R	35.87	44.70	0.0	0.00	0.00	0.00	
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.91	2.90	2.91	2.90	HS 57.99	104.4
HS20	4.85	4.83	4.85	4.83	HS 96.65	174.0
2F1	7.51	7.82	7.51	7.82	0.00	112.6
3F1	6.14	5.47	6.14	5.47	0.00	125.8
4F1	6.64	5.10	6.64	5.10	0.00	137.7

5C1 6.19 5.86 6.19 5.86 0.00 234.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.3	3.9

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	177.9	-163.7	158.7	-182.9
OPER	300.6C	-268.7	268.7	-300.6C	296.5	-272.8	264.5	-304.8

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	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09			
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00		
OPER	HS20	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09			
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00		
OPER	2F1	55.29 R	42.53	41.09	0.0	0.00	0.00	0.00			
		-28.68 L	-22.07	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	69.87 R	53.75	45.09	0.0	0.00	0.00	0.00			
		-41.04 L	-31.57	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	71.19 R	54.77	45.09	0.0	0.00	0.00	0.00			
		-43.98 L	-33.83	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	68.27 R	52.51	47.09	0.0	0.00	0.00	0.00			
		-42.18 L	-32.45	3.13	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	2.12	3.53	1.89	3.94	HS 37.88	68.2
HS20	3.54	5.88	3.16	6.56	HS 63.14	113.7
2F1	5.36	9.51	4.78	10.62	0.00	71.8
3F1	4.24	6.65	3.79	7.43	0.00	87.1
4F1	4.16	6.20	3.71	6.93	0.00	100.3
5C1	4.34	6.47	3.88	7.22	0.00	155.0

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.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.3	0.0	4.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.6	67.1
OPER	151.3	-120.9	111.8

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	-5.15	20.51	-3.96	15.77	-6.59	17.81	-5.07	13.70
OPER	HS20	-5.15	20.51	-3.96	15.77	-6.59	17.81	-5.07	13.70
OPER	2F1	-3.63	12.57	-2.79	9.67	0.00	0.00	0.00	0.00
OPER	3F1	-3.81	16.60	-2.93	12.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.00	17.14	-2.31	13.19	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	16.06	-4.86	12.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.02	3.27	HS 65.44	117.8
HS20	18.36	5.45	HS 109.07	196.3
2F1	33.34	8.89	0.00	133.4
3F1	31.74	6.74	0.00	154.9
4F1	40.29	6.52	0.00	176.1
5C1	19.13	6.96	0.00	278.5

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 0.3
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. 170.1	169.3	-166.0	169.3	-166.0	165.2	-170.1	165.2	-
OPER 283.5	279.4	-279.4	279.4	-279.4	275.3	-283.5	275.3	-

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	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09	
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00
OPER	HS20	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09	
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00
OPER	2F1	55.29 R	42.53	41.09	0.0	0.00	0.00	0.00	
		-28.68 L	-22.07	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	69.87 R	53.75	45.09	0.0	0.00	0.00	0.00	
		-41.04 L	-31.57	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	71.19 R	54.77	45.09	0.0	0.00	0.00	0.00	
		-43.98 L	-33.83	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	68.27 R	52.51	47.09	0.0	0.00	0.00	0.00	
		-42.18 L	-32.45	3.13	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.97	3.66	1.97	3.66	HS 39.42	71.0
HS20	3.29	6.11	3.29	6.11	HS 65.71	118.3
2F1	4.98	9.89	4.98	9.89	0.00	74.7
3F1	3.94	6.91	3.94	6.91	0.00	90.6
4F1	3.87	6.45	3.87	6.45	0.00	104.4

5C1 4.03 6.72 4.03 6.72 0.00 161.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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 0.9
Superimposed Dead Load Moment 11.7

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	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

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	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48			
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00		
OPER	HS20	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48			
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00		
OPER	2F1	64.11 R	49.32	43.48	0.0	0.00	0.00	0.00			
		-22.81 L	-17.55	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.45 R	62.65	43.48	0.0	0.00	0.00	0.00			
		-32.64 L	-25.11	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	86.98 R	66.91	47.48	0.0	0.00	0.00	0.00			
		-34.98 L	-26.91	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	79.69 R	61.30	84.48	0.0	0.00	0.00	0.00			
		-38.85 L	-29.89	4.01	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	4.57	1.66	5.09	HS 33.16	59.7
HS20	3.11	7.62	2.76	8.48	HS 55.27	99.5
2F1	4.49	12.33	3.99	13.73	0.00	59.9
3F1	3.54	8.62	3.14	9.60	0.00	72.3
4F1	3.31	8.04	2.94	8.96	0.00	79.5
5C1	3.61	7.24	3.21	8.06	0.00	128.5

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.	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	68.3
OPER	151.3	-118.9	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	-9.55	17.12	-7.34	13.17	-9.16	14.86	-7.04	11.43
OPER	HS20	-9.55	17.12	-7.34	13.17	-9.16	14.86	-7.04	11.43
OPER	2F1	-5.72	10.14	-4.40	7.80	0.00	0.00	0.00	0.00
OPER	3F1	-6.70	13.03	-5.16	10.02	0.00	0.00	0.00	0.00
OPER	4F1	-5.60	13.13	-4.31	10.10	0.00	0.00	0.00	0.00
OPER	5C1	-8.43	13.38	-6.49	10.29	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.47	3.99	HS 79.76	143.6
HS20	12.46	6.65	HS 132.93	239.3
2F1	20.80	11.22	0.00	168.3
3F1	17.74	8.73	0.00	200.9
4F1	21.24	8.67	0.00	234.0
5C1	14.10	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. 2.400 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

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. 175.2	172.7	-162.6	172.7	-162.6	160.1	-175.2	160.1	-
OPER 292.0	279.4	-279.4	279.4	-279.4	266.8	-292.0	266.8	-

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	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48	
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00
OPER	HS20	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48	
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00
OPER	2F1	64.11 R	49.32	43.48	0.0	0.00	0.00	0.00	
		-22.81 L	-17.55	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.45 R	62.65	43.48	0.0	0.00	0.00	0.00	
		-32.64 L	-25.11	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	86.98 R	66.91	47.48	0.0	0.00	0.00	0.00	
		-34.98 L	-26.91	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	79.69 R	61.30	84.48	0.0	0.00	0.00	0.00	
		-38.85 L	-29.89	4.01	0.0	0.00	0.00	0.00	0.00

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	4.74	1.73	4.74	HS 34.56	62.2
HS20	2.88	7.91	2.88	7.91	HS 57.59	103.7
2F1	4.16	12.80	4.16	12.80	0.00	62.4
3F1	3.28	8.95	3.28	8.95	0.00	75.3
4F1	3.07	8.35	3.07	8.35	0.00	82.8

5C1	3.35	7.52	3.35	7.52	0.00	133.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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. 2.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
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	170.5	-171.0	151.3	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.1	252.2	-317.1

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	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88			
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00		
OPER	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88			
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00		
OPER	2F1	64.71 L	49.77	25.88	0.0	0.00	0.00	0.00			
		-16.94 L	-13.03	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	85.89 R	66.07	45.88	0.0	0.00	0.00	0.00			
		-24.24 L	-18.65	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	89.18 R	68.60	49.88	0.0	0.00	0.00	0.00			
		-25.98 L	-19.99	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.06 R	64.66	86.88	0.0	0.00	0.00	0.00			
		-36.69 L	-28.23	4.74	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	1.92	6.24	1.71	6.94	HS 34.13	61.4
HS20	3.20	10.39	2.84	11.56	HS 56.88	102.4
2F1	4.39	16.82	3.90	18.71	0.00	58.5
3F1	3.31	11.76	2.94	13.08	0.00	67.5
4F1	3.19	10.97	2.83	12.20	0.00	76.4
5C1	3.38	7.77	3.00	8.64	0.00	120.0

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
0.0	0.0	0.6

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	-13.52	13.48	-10.40	10.37	-11.93	11.97	-9.17	9.21
OPER	HS20	-13.52	13.48	-10.40	10.37	-11.93	11.97	-9.17	9.21
OPER	2F1	-8.01	7.76	-6.16	5.97	0.00	0.00	0.00	0.00
OPER	3F1	-9.93	9.63	-7.64	7.41	0.00	0.00	0.00	0.00
OPER	4F1	-9.46	9.05	-7.27	6.97	0.00	0.00	0.00	0.00
OPER	5C1	-10.75	11.02	-8.27	8.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.19	5.15	HS 103.04	185.5
HS20	8.65	8.59	HS 171.74	309.1
2F1	14.61	14.92	0.00	219.1
3F1	11.78	12.02	0.00	271.0
4F1	12.37	12.79	0.00	334.0
5C1	10.88	10.51	0.00	420.2

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. 2.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
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	-
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

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	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88	
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00
OPER	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88	
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00
OPER	2F1	64.71 L	49.77	25.88	0.0	0.00	0.00	0.00	
		-16.94 L	-13.03	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	85.89 R	66.07	45.88	0.0	0.00	0.00	0.00	
		-24.24 L	-18.65	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	89.18 R	68.60	49.88	0.0	0.00	0.00	0.00	
		-25.98 L	-19.99	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.06 R	64.66	86.88	0.0	0.00	0.00	0.00	
		-36.69 L	-28.23	4.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	6.47	1.78	6.47	HS 35.58	64.0
HS20	2.96	10.78	2.96	10.78	HS 59.30	106.7
2F1	4.06	17.46	4.06	17.46	0.00	61.0
3F1	3.06	12.20	3.06	12.20	0.00	70.4
4F1	2.95	11.39	2.95	11.39	0.00	79.6

5C1 3.13 8.06 3.13 8.06 0.00 125.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
1.1 14.2

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	171.2	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.3	-284.0	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	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27			
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00		
OPER	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27			
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00		
OPER	2F1	63.46 L	48.82	28.27	0.0	0.00	0.00	0.00			
		-18.72 R	-14.40	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	80.32 L	61.78	28.27	0.0	0.00	0.00	0.00			
		-26.86 R	-20.66	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	85.78 L	65.98	24.27	0.0	0.00	0.00	0.00			
		-28.90 R	-22.23	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.90 L	62.23	26.27	0.0	0.00	0.00	0.00			
		-35.49 L	-27.30	5.62	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	1.88	6.12	1.67	6.81	HS 33.43	60.2
HS20	3.14	10.20	2.79	11.35	HS 55.72	100.3
2F1	4.50	15.17	3.99	16.88	0.00	59.9
3F1	3.55	10.57	3.15	11.76	0.00	72.5
4F1	3.33	9.83	2.95	10.93	0.00	79.7
5C1	3.53	8.00	3.13	8.90	0.00	125.3

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 Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.4	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	-17.02	9.38	-13.09	7.21	-14.82	9.23	-11.40	7.10
OPER	HS20	-17.02	9.38	-13.09	7.21	-14.82	9.23	-11.40	7.10
OPER	2F1	-10.41	5.52	-8.01	4.25	0.00	0.00	0.00	0.00
OPER	3F1	-13.39	6.51	-10.30	5.01	0.00	0.00	0.00	0.00
OPER	4F1	-13.53	5.51	-10.41	4.24	0.00	0.00	0.00	0.00
OPER	5C1	-13.22	8.97	-10.17	6.90	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.05	7.54	HS 81.04	145.9
HS20	6.75	12.56	HS 135.07	243.1
2F1	11.04	21.34	0.00	165.5
3F1	8.58	18.10	0.00	197.4
4F1	8.49	21.37	0.00	229.4
5C1	8.69	13.13	0.00	347.8

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. 2.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

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. 176.8	173.8	-161.5	173.8	-161.5	158.4	-176.8	158.4	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

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	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27	
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00
OPER	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27	
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00
OPER	2F1	63.46 L	48.82	28.27	0.0	0.00	0.00	0.00	
		-18.72 R	-14.40	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	80.32 L	61.78	28.27	0.0	0.00	0.00	0.00	
		-26.86 R	-20.66	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.78 L	65.98	24.27	0.0	0.00	0.00	0.00	
		-28.90 R	-22.23	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.90 L	62.23	26.27	0.0	0.00	0.00	0.00	
		-35.49 L	-27.30	5.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.35	1.74	6.35	HS 34.85	62.7
HS20	2.90	10.58	2.90	10.58	HS 58.08	104.5
2F1	4.16	15.74	4.16	15.74	0.00	62.4
3F1	3.29	10.97	3.29	10.97	0.00	75.6
4F1	3.08	10.20	3.08	10.20	0.00	83.1

5C1	3.26	8.31	3.26	8.31	0.00	130.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 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	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66			
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00		
OPER	HS20	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66			
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00		
OPER	2F1	53.88 L	41.44	30.66	0.0	0.00	0.00	0.00			
		-23.40 R	-18.00	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.90 L	52.23	26.66	0.0	0.00	0.00	0.00			
		-33.57 R	-25.82	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	69.04 L	53.11	26.66	0.0	0.00	0.00	0.00			
		-36.12 R	-27.79	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.94 R	54.57	87.66	0.0	0.00	0.00	0.00			
		-35.87 R	-27.59	68.62	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	2.14	4.80	1.91	5.35	HS 38.15	68.7
HS20	3.57	7.99	3.18	8.91	HS 63.59	114.5
2F1	5.40	11.89	4.81	13.25	0.00	72.2
3F1	4.29	8.28	3.82	9.24	0.00	87.8
4F1	4.22	7.70	3.75	8.59	0.00	101.4
5C1	4.10	7.75	3.65	8.65	0.00	146.1

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.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-67.8 71.9
OPER	151.3	-112.9 119.8

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	-20.39	4.89	-15.68	3.76	-17.75	6.71	-13.65	5.16
OPER	HS20	-20.39	4.89	-15.68	3.76	-17.75	6.71	-13.65	5.16
OPER	2F1	-12.84	3.50	-9.88	2.69	0.00	0.00	0.00	0.00
OPER	3F1	-16.99	3.74	-13.07	2.88	0.00	0.00	0.00	0.00
OPER	4F1	-17.49	3.74	-13.45	2.88	0.00	0.00	0.00	0.00
OPER	5C1	-16.15	7.02	-12.43	5.40	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	3.32	10.72	HS 66.47	119.6
HS20	5.54	17.86	HS 110.78	199.4
2F1	8.80	34.21	0.00	131.9
3F1	6.65	32.04	0.00	152.9
4F1	6.46	32.04	0.00	174.4
5C1	6.99	17.06	0.00	279.7

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. 2.700 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	-163.8	171.4	-163.8	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	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66	
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00
OPER	HS20	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66	
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00
OPER	2F1	53.88 L	41.44	30.66	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.90 L	52.23	26.66	0.0	0.00	0.00	0.00	
		-33.57 R	-25.82	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	69.04 L	53.11	26.66	0.0	0.00	0.00	0.00	
		-36.12 R	-27.79	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.94 R	54.57	87.66	0.0	0.00	0.00	0.00	
		-35.87 R	-27.59	68.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.98	1.99	4.98	HS 39.73	71.5
HS20	3.31	8.30	3.31	8.30	HS 66.22	119.2
2F1	5.01	12.35	5.01	12.35	0.00	75.1
3F1	3.97	8.60	3.97	8.60	0.00	91.4
4F1	3.91	8.00	3.91	8.00	0.00	105.6

5C1	3.81	8.05	3.81	8.05	0.00	152.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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. 2.800 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	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-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	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05			
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23		
OPER	HS20	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05			
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23		
OPER	2F1	36.49 L	28.07	33.05	0.0	0.00	0.00	0.00			
		-28.08 R	-21.60	65.01	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	44.04 L	33.87	29.05	0.0	0.00	0.00	0.00			
		-40.29 R	-30.99	67.40	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	40.32 L	31.01	25.05	0.0	0.00	0.00	0.00			
		-43.35 R	-33.35	70.62	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	52.75 R	40.58	90.05	0.0	0.00	0.00	0.00			
		-37.44 R	-28.80	69.40	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	3.21	3.84	2.87	4.30	HS 57.37	103.3
HS20	5.35	6.41	4.78	7.17	HS 95.61	172.1
2F1	8.27	9.53	7.39	10.67	0.00	110.9
3F1	6.85	6.64	6.13	7.43	0.00	140.9
4F1	7.48	6.17	6.69	6.91	0.00	166.6
5C1	5.72	7.15	5.11	8.00	0.00	204.5

SHEAR 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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-5.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.6	73.1
OPER	151.3	-111.0	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	-24.99	3.79	-19.22	2.92	-20.63	4.48	-15.87	3.45
OPER	HS20	-24.99	3.79	-19.22	2.92	-20.63	4.48	-15.87	3.45
OPER	2F1	-15.20	2.45	-11.69	1.89	0.00	0.00	0.00	0.00
OPER	3F1	-20.59	3.51	-15.84	2.70	0.00	0.00	0.00	0.00
OPER	4F1	-21.23	3.74	-16.33	2.88	0.00	0.00	0.00	0.00
OPER	5C1	-19.38	5.22	-14.91	4.02	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.66	16.32	HS 53.29	95.9
HS20	4.44	27.19	HS 88.82	159.9
2F1	7.30	49.62	0.00	109.5
3F1	5.39	34.69	0.00	124.0
4F1	5.23	32.57	0.00	141.1
5C1	5.72	23.31	0.00	229.0

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. 2.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -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. 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	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05	
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23
OPER	HS20	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05	
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23
OPER	2F1	36.49 L	28.07	33.05	0.0	0.00	0.00	0.00	
		-28.08 R	-21.60	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.04 L	33.87	29.05	0.0	0.00	0.00	0.00	
		-40.29 R	-30.99	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.32 L	31.01	25.05	0.0	0.00	0.00	0.00	
		-43.35 R	-33.35	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.75 R	40.58	90.05	0.0	0.00	0.00	0.00	
		-37.44 R	-28.80	69.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.65	107.4
HS20	4.97	6.66	4.97	6.66	HS 99.42	179.0
2F1	7.69	9.91	7.69	9.91	0.00	115.3
3F1	6.37	6.91	6.37	6.91	0.00	146.5
4F1	6.96	6.42	6.96	6.42	0.00	173.3

5C1

5.32

7.43

5.32

7.43

0.00

212.7

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

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-1.3 -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	190.2	-151.4	171.0	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.0	-252.3	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	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44			
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88		
OPER	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44			
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88		
OPER	2F1	12.71 L	9.78	35.44	0.0	0.00	0.00	0.00			
		-32.76 R	-25.20	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.59 R	9.69	91.32	0.0	0.00	0.00	0.00			
		-47.00 R	-36.15	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	13.39 R	10.30	95.32	0.0	0.00	0.00	0.00			
		-50.57 R	-38.90	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	26.62 R	20.48	92.44	0.0	0.00	0.00	0.00			
		-41.17 R	-31.67	71.79	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	7.88	2.77	7.09	3.12	HS 55.45	99.8
HS20	13.14	4.62	11.81	5.21	HS 92.41	166.3
2F1	24.95	7.70	22.43	8.68	0.00	115.5
3F1	25.17	5.37	22.63	6.05	0.00	123.4
4F1	23.68	4.99	21.29	5.62	0.00	134.7
5C1	11.91	6.13	10.71	6.91	0.00	245.1

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 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	-109.0	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	-29.62	3.97	-22.79	3.06	-23.37	3.74	-17.97	2.88
OPER	HS20	-29.62	3.97	-22.79	3.06	-23.37	3.74	-17.97	2.88
OPER	2F1	-17.40	2.45	-13.38	1.89	0.00	0.00	0.00	0.00
OPER	3F1	-24.05	3.51	-18.50	2.70	0.00	0.00	0.00	0.00
OPER	4F1	-24.80	3.76	-19.08	2.89	0.00	0.00	0.00	0.00
OPER	5C1	-22.61	3.62	-17.39	2.78	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	18.69	HS 44.15	79.5
HS20	3.68	31.15	HS 73.58	132.4
2F1	6.26	50.43	0.00	94.0
3F1	4.53	35.25	0.00	104.2
4F1	4.39	32.89	0.00	118.6
5C1	4.82	34.20	0.00	192.8

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. 2.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -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 263.0	279.4	-279.4	279.4	-279.4	295.8	-263.0	295.8	-

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	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44	
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88
OPER	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44	
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88
OPER	2F1	12.71 L	9.78	35.44	0.0	0.00	0.00	0.00	
		-32.76 R	-25.20	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.59 R	9.69	91.32	0.0	0.00	0.00	0.00	
		-47.00 R	-36.15	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.39 R	10.30	95.32	0.0	0.00	0.00	0.00	
		-50.57 R	-38.90	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.62 R	20.48	92.44	0.0	0.00	0.00	0.00	
		-41.17 R	-31.67	71.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.35	2.89	7.35	2.89	HS 57.81	104.1
HS20	12.26	4.82	12.26	4.82	HS 96.35	173.4
2F1	23.27	8.03	23.27	8.03	0.00	120.4
3F1	23.49	5.60	23.49	5.60	0.00	128.7
4F1	22.09	5.20	22.09	5.20	0.00	140.4

5C1	11.11	6.39	11.11	6.39	0.00	255.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-2.8 -33.7

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	202.2	-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	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35			
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40		
OPER	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35			
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40		
OPER	2F1	12.40 L	9.54	6.74	0.0	0.00	0.00	0.00	0.00		
		-38.26 L	-29.43	30.66	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.75 L	13.65	4.35	0.0	0.00	0.00	0.00	0.00		
		-61.95 R	-47.66	52.62	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	19.02 L	14.63	1.13	0.0	0.00	0.00	0.00	0.00		
		-72.40 R	-55.69	53.05	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	16.07 L	12.36	-35.04	0.0	0.00	0.00	0.00	0.00		
		-59.68 L	-45.91	43.01	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	10.07	1.46	9.12	1.66	HS 29.21	52.6
HS20	16.79	2.43	15.19	2.77	HS 48.69	87.6
2F1	27.17	6.07	24.59	6.91	0.00	91.0
3F1	18.99	3.75	17.19	4.26	0.00	86.2
4F1	17.72	3.21	16.04	3.65	0.00	86.6
5C1	20.98	3.89	18.99	4.43	0.00	155.6

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.	3.000	2F1	2F1
		3F1	3F1
		4F1	4F1
		5C1	5C1
Dead Load	Superimposed Dead Load		
(-) Shear (+) Shear	(-) Shear (+) Shear		
-0.6 -0.7	-6.8 0.0		

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.0
OPER	151.3	-107.0	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	-29.62	33.80	-22.79	26.00	-23.37	25.99	-17.97	20.00
OPER	HS20	-29.62	33.80	-22.79	26.00	-23.37	25.99	-17.97	20.00
OPER	2F1	-17.40	19.28	-13.38	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-24.05	27.11	-18.50	20.85	0.00	0.00	0.00	0.00
OPER	4F1	-24.80	28.49	-19.08	21.92	0.00	0.00	0.00	0.00
OPER	5C1	-22.61	25.42	-17.39	19.55	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
HS20	3.15	3.15	HS 63.00	113.4
2F1	5.53	5.53	0.00	82.9
3F1	3.93	3.93	0.00	90.4
4F1	3.74	3.74	0.00	100.9
5C1	4.17	4.19	0.00	166.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -33.7

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. 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 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	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	2F1	12.40 L	9.54	6.74	0.0	0.00	0.00	0.00	
		-38.26 L	-29.43	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.75 L	13.65	4.35	0.0	0.00	0.00	0.00	
		-61.95 R	-47.66	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	19.02 L	14.63	1.13	0.0	0.00	0.00	0.00	
		-72.40 R	-55.69	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	16.07 L	12.36	-35.04	0.0	0.00	0.00	0.00	
		-59.68 L	-45.91	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.44	1.53	9.44	1.53	HS 30.56	55.0
HS20	15.73	2.55	15.73	2.55	HS 50.94	91.7
2F1	25.46	6.35	25.46	6.35	0.00	95.3
3F1	17.80	3.92	17.80	3.92	0.00	90.2
4F1	16.60	3.36	16.60	3.36	0.00	90.6

5C1	19.66	4.07	19.66	4.07	0.00	162.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-2.8 -33.7

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	202.2	-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	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35			
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40		
OPER	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35			
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40		
OPER	2F1	12.40 L	9.54	6.74	0.0	0.00	0.00	0.00	0.00		
		-38.26 L	-29.43	30.66	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.75 L	13.65	4.35	0.0	0.00	0.00	0.00	0.00		
		-61.95 R	-47.66	52.62	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	19.02 L	14.63	1.13	0.0	0.00	0.00	0.00	0.00		
		-72.40 R	-55.69	53.05	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	16.07 L	12.36	-35.04	0.0	0.00	0.00	0.00	0.00		
		-59.68 L	-45.91	43.01	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	10.07	1.46	9.12	1.66	HS 29.21	52.6
HS20	16.79	2.43	15.19	2.77	HS 48.69	87.6
2F1	27.17	6.07	24.59	6.91	0.00	91.0
3F1	18.99	3.75	17.19	4.26	0.00	86.2
4F1	17.72	3.21	16.04	3.65	0.00	86.6
5C1	20.98	3.89	18.99	4.43	0.00	155.6

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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-8.7	9.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.0
OPER	151.3	-107.0	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	-33.97	33.80	-26.13	26.00	-25.86	25.99	-19.89	20.00
OPER	HS20	-33.97	33.80	-26.13	26.00	-25.86	25.99	-19.89	20.00
OPER	2F1	-19.34	19.28	-14.87	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-27.22	27.11	-20.94	20.85	0.00	0.00	0.00	0.00
OPER	4F1	-28.64	28.49	-22.03	21.92	0.00	0.00	0.00	0.00
OPER	5C1	-25.68	25.42	-19.76	19.55	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
HS20	3.15	3.15	HS 63.00	113.4
2F1	5.53	5.53	0.00	82.9
3F1	3.93	3.93	0.00	90.4
4F1	3.74	3.74	0.00	100.9
5C1	4.17	4.19	0.00	166.7

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. 3.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.8 -33.7

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. 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	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	2F1	12.40 L	9.54	6.74	0.0	0.00	0.00	0.00	
		-38.26 L	-29.43	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.75 L	13.65	4.35	0.0	0.00	0.00	0.00	
		-61.95 R	-47.66	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	19.02 L	14.63	1.13	0.0	0.00	0.00	0.00	
		-72.40 R	-55.69	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	16.07 L	12.36	-35.04	0.0	0.00	0.00	0.00	
		-59.68 L	-45.91	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.44	1.53	9.44	1.53	HS 30.56	55.0
HS20	15.73	2.55	15.73	2.55	HS 50.94	91.7
2F1	25.46	6.35	25.46	6.35	0.00	95.3
3F1	17.80	3.92	17.80	3.92	0.00	90.2
4F1	16.60	3.36	16.60	3.36	0.00	90.6

5C1	19.66	4.07	19.66	4.07	0.00	162.8
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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	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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	-14.2

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	189.6	-151.9	170.4	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.1	-253.2	284.1	-285.2

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	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23			
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27		59.79	
OPER	HS20	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23			
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27		59.79	
OPER	2F1	13.04 R	10.03	60.23	0.0	0.00	0.00	0.00		0.00	
		-33.41 L	-25.70	30.66	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	15.50 L	11.92	4.35	0.0	0.00	0.00	0.00		0.00	
		-47.91 L	-36.86	28.27	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	16.47 L	12.67	0.35	0.0	0.00	0.00	0.00		0.00	
		-51.54 L	-39.65	25.05	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	29.46 L	22.66	3.23	0.0	0.00	0.00	0.00		0.00	
		-42.19 L	-32.46	24.66	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	7.61	2.73	6.84	3.08	HS 54.66	98.4
HS20	12.69	4.55	11.40	5.13	HS 91.09	164.0
2F1	24.24	7.58	21.79	8.54	0.00	113.7
3F1	20.40	5.28	18.33	5.95	0.00	121.6
4F1	19.19	4.91	17.25	5.53	0.00	132.7
5C1	10.73	6.00	9.64	6.76	0.00	240.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.100

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	65.1
OPER	151.3	-124.2	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	-2.84	29.42	-2.19	22.63	-3.20	23.47	-2.46	18.05
OPER	HS20	-2.84	29.42	-2.19	22.63	-3.20	23.47	-2.46	18.05
OPER	2F1	-1.99	17.31	-1.53	13.32	0.00	0.00	0.00	0.00
OPER	3F1	-2.86	23.90	-2.20	18.38	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	24.62	-2.35	18.94	0.00	0.00	0.00	0.00
OPER	5C1	-2.90	22.35	-2.23	17.19	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.30	2.21	HS 44.29	79.7
HS20	38.84	3.69	HS 73.82	132.9
2F1	62.32	6.27	0.00	94.1
3F1	43.44	4.54	0.00	104.5
4F1	40.63	4.41	0.00	119.1
5C1	42.81	4.86	0.00	194.3

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. 3.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.2

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. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

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	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23	
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27	59.79
OPER	HS20	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23	
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27	59.79
OPER	2F1	13.04 R	10.03	60.23	0.0	0.00	0.00	0.00	
		-33.41 L	-25.70	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.50 L	11.92	4.35	0.0	0.00	0.00	0.00	
		-47.91 L	-36.86	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.47 L	12.67	0.35	0.0	0.00	0.00	0.00	
		-51.54 L	-39.65	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.46 L	22.66	3.23	0.0	0.00	0.00	0.00	
		-42.19 L	-32.46	24.66	0.0	0.00	0.00	0.00	0.00

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	2.85	7.10	2.85	HS 56.98	102.6
HS20	11.84	4.75	11.84	4.75	HS 94.96	170.9
2F1	22.61	7.90	22.61	7.90	0.00	118.5
3F1	19.03	5.51	19.03	5.51	0.00	126.7
4F1	17.91	5.12	17.91	5.12	0.00	138.3

5C1 10.01 6.26 10.01 6.26 0.00 250.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 0.0
Superimposed Dead Load Moment 0.8

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	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	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62			
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36		
OPER	HS20	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62			
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36		
OPER	2F1	36.65 R	28.19	62.62	0.0	0.00	0.00	0.00			
		-28.56 L	-21.97	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	44.29 R	34.07	66.62	0.0	0.00	0.00	0.00			
		-40.96 L	-31.51	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	40.59 R	31.22	70.62	0.0	0.00	0.00	0.00			
		-44.06 L	-33.89	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.76 L	42.12	5.62	0.0	0.00	0.00	0.00			
		-38.13 L	-29.33	26.27	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	3.17	3.84	2.84	4.29	HS 56.71	102.1
HS20	5.29	6.39	4.73	7.15	HS 94.52	170.1
2F1	8.18	9.44	7.31	10.56	0.00	109.6
3F1	6.77	6.58	6.05	7.36	0.00	139.1
4F1	7.39	6.12	6.60	6.84	0.00	165.2
5C1	5.47	7.07	4.89	7.91	0.00	195.6

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.	3.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.3
OPER	151.3	-122.2	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	-2.84	24.77	-2.19	19.05	-4.45	20.70	-3.42	15.92
OPER	HS20	-2.84	24.77	-2.19	19.05	-4.45	20.70	-3.42	15.92
OPER	2F1	-1.99	15.09	-1.53	11.61	0.00	0.00	0.00	0.00
OPER	3F1	-2.86	20.41	-2.20	15.70	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	21.07	-2.35	16.21	0.00	0.00	0.00	0.00
OPER	5C1	-4.40	19.14	-3.38	14.72	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.68	HS 53.57	96.4
HS20	27.48	4.46	HS 89.28	160.7
2F1	61.32	7.33	0.00	109.9
3F1	42.74	5.42	0.00	124.6
4F1	39.98	5.25	0.00	141.7
5C1	27.78	5.78	0.00	231.0

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 0.0
Superimposed Dead Load Moment 0.8

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. 168.1	168.0	-167.3	168.0	-167.3	167.1	-168.1	167.1	-
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 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	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62	
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36
OPER	HS20	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62	
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36
OPER	2F1	36.65 R	28.19	62.62	0.0	0.00	0.00	0.00	
		-28.56 L	-21.97	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.29 R	34.07	66.62	0.0	0.00	0.00	0.00	
		-40.96 L	-31.51	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.59 R	31.22	70.62	0.0	0.00	0.00	0.00	
		-44.06 L	-33.89	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.76 L	42.12	5.62	0.0	0.00	0.00	0.00	
		-38.13 L	-29.33	26.27	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 58.99	106.2
HS20	4.92	6.65	4.92	6.65	HS 98.31	177.0
2F1	7.60	9.81	7.60	9.81	0.00	114.0
3F1	6.29	6.84	6.29	6.84	0.00	144.7
4F1	6.86	6.36	6.86	6.36	0.00	171.8

5C1

5.09

7.35

5.09

7.35

0.00

203.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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
0.9	11.5

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	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.0	256.3	-313.0

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	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	HS20	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	2F1	53.74 R	41.34	65.01	0.0	0.00	0.00	0.00	
		-23.70 L	-18.23	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.68 R	52.06	69.01	0.0	0.00	0.00	0.00	
		-34.00 L	-26.15	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.84 R	52.96	69.01	0.0	0.00	0.00	0.00	
		-36.57 L	-28.13	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	71.91 L	55.32	8.01	0.0	0.00	0.00	0.00	
		-35.72 L	-27.48	27.05	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	2.12	4.82	1.88	5.37	HS 37.70	67.9
HS20	3.53	8.03	3.14	8.95	HS 62.83	113.1
2F1	5.36	11.86	4.77	13.20	0.00	71.5
3F1	4.26	8.27	3.79	9.21	0.00	87.1
4F1	4.19	7.68	3.72	8.56	0.00	100.5
5C1	4.01	7.87	3.56	8.76	0.00	142.5

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.	3.300		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	-4.96	20.31	-3.81	15.63	-6.71	17.79	-5.16	13.69
OPER	HS20	-4.96	20.31	-3.81	15.63	-6.71	17.79	-5.16	13.69
OPER	2F1	-3.57	12.71	-2.74	9.78	0.00	0.00	0.00	0.00
OPER	3F1	-3.80	16.79	-2.93	12.92	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	17.29	-2.35	13.30	0.00	0.00	0.00	0.00
OPER	5C1	-6.20	15.99	-4.77	12.30	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.32	HS 66.47	119.7
HS20	17.91	5.54	HS 110.79	199.4
2F1	33.70	8.86	0.00	132.8
3F1	31.59	6.70	0.00	154.1
4F1	39.34	6.51	0.00	175.8
5C1	19.37	7.04	0.00	281.5

SERVICEABILITY 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 Moment 0.9
Superimposed Dead Load Moment 11.5

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. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

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	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	HS20	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	2F1	53.74 R	41.34	65.01	0.0	0.00	0.00	0.00	
		-23.70 L	-18.23	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.68 R	52.06	69.01	0.0	0.00	0.00	0.00	
		-34.00 L	-26.15	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.84 R	52.96	69.01	0.0	0.00	0.00	0.00	
		-36.57 L	-28.13	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	71.91 L	55.32	8.01	0.0	0.00	0.00	0.00	
		-35.72 L	-27.48	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.96	5.00	1.96	5.00	HS 39.28	70.7
HS20	3.27	8.34	3.27	8.34	HS 65.47	117.8
2F1	4.97	12.31	4.97	12.31	0.00	74.5
3F1	3.94	8.58	3.94	8.58	0.00	90.7
4F1	3.88	7.98	3.88	7.98	0.00	104.7

5C1	3.71	8.17	3.71	8.17	0.00	148.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 1.4
Superimposed Dead Load Moment 17.8

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	168.9	-172.7	149.7	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.8

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	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40			
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00		
OPER	HS20	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40			
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00		
OPER	2F1	62.95 R	48.42	67.40	0.0	0.00	0.00	0.00			
		-18.85 L	-14.50	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.67 R	61.29	67.40	0.0	0.00	0.00	0.00			
		-27.04 L	-20.80	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	85.09 R	65.46	71.40	0.0	0.00	0.00	0.00			
		-29.09 L	-22.38	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.81 R	62.16	69.40	0.0	0.00	0.00	0.00			
		-33.88 L	-26.06	27.93	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	1.85	6.21	1.64	6.90	HS 32.86	59.1
HS20	3.09	10.34	2.74	11.49	HS 54.77	98.6
2F1	4.47	15.27	3.96	16.96	0.00	59.4
3F1	3.53	10.65	3.13	11.83	0.00	72.0
4F1	3.31	9.90	2.93	11.00	0.00	79.2
5C1	3.48	8.50	3.09	9.44	0.00	123.5

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.	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	114.5

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	-9.38	16.93	-7.22	13.02	-9.27	14.84	-7.13	11.41
OPER	HS20	-9.38	16.93	-7.22	13.02	-9.27	14.84	-7.13	11.41
OPER	2F1	-5.62	10.27	-4.32	7.90	0.00	0.00	0.00	0.00
OPER	3F1	-6.62	13.20	-5.09	10.15	0.00	0.00	0.00	0.00
OPER	4F1	-5.61	13.30	-4.31	10.23	0.00	0.00	0.00	0.00
OPER	5C1	-8.28	13.29	-6.37	10.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.56	4.06	HS 81.18	146.1
HS20	12.60	6.76	HS 135.29	243.5
2F1	21.04	11.15	0.00	167.3
3F1	17.85	8.68	0.00	199.5
4F1	21.09	8.61	0.00	232.5
5C1	14.28	8.62	0.00	344.7

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. 3.400 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. 179.2	175.3	-160.0	175.3	-160.0	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	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40	
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00
OPER	HS20	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40	
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00
OPER	2F1	62.95 R	48.42	67.40	0.0	0.00	0.00	0.00	
		-18.85 L	-14.50	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.67 R	61.29	67.40	0.0	0.00	0.00	0.00	
		-27.04 L	-20.80	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.09 R	65.46	71.40	0.0	0.00	0.00	0.00	
		-29.09 L	-22.38	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.81 R	62.16	69.40	0.0	0.00	0.00	0.00	
		-33.88 L	-26.06	27.93	0.0	0.00	0.00	0.00	0.00

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	6.44	1.71	6.44	HS 34.28	61.7
HS20	2.86	10.73	2.86	10.73	HS 57.13	102.8
2F1	4.13	15.84	4.13	15.84	0.00	62.0
3F1	3.27	11.04	3.27	11.04	0.00	75.1
4F1	3.06	10.27	3.06	10.27	0.00	82.6

5C1	3.22	8.81	3.22	8.81	0.00	128.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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. 3.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

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	167.6	-174.0	148.4	-193.2
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	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79			
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00		
OPER	HS20	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79			
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00		
OPER	2F1	63.87 L	49.13	49.79	0.0	0.00	0.00	0.00			
		-14.00 L	-10.77	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.63 R	65.10	69.79	0.0	0.00	0.00	0.00			
		-20.08 L	-15.45	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	87.91 R	67.62	73.79	0.0	0.00	0.00	0.00			
		-21.60 L	-16.62	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.64 L	64.34	8.79	0.0	0.00	0.00	0.00			
		-33.11 L	-25.47	28.66	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	1.91	8.23	1.69	9.14	HS 33.77	60.8
HS20	3.18	13.72	2.82	15.24	HS 56.29	101.3
2F1	4.37	20.70	3.87	22.99	0.00	58.1
3F1	3.30	14.44	2.92	16.03	0.00	67.2
4F1	3.18	13.42	2.81	14.90	0.00	76.0
5C1	3.34	8.76	2.96	9.72	0.00	118.3

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 (-) 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	151.3	-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	-13.39	13.39	-10.30	10.30	-12.04	11.93	-9.26	9.18
OPER	HS20	-13.39	13.39	-10.30	10.30	-12.04	11.93	-9.26	9.18
OPER	2F1	-7.89	7.87	-6.07	6.05	0.00	0.00	0.00	0.00
OPER	3F1	-9.79	9.77	-7.53	7.52	0.00	0.00	0.00	0.00
OPER	4F1	-9.25	9.22	-7.12	7.10	0.00	0.00	0.00	0.00
OPER	5C1	-10.60	10.52	-8.15	8.10	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.21	5.22	HS 104.17	187.5
HS20	8.68	8.70	HS 173.61	312.5
2F1	14.74	14.80	0.00	221.1
3F1	11.87	11.92	0.00	273.1
4F1	12.56	12.63	0.00	339.2
5C1	10.97	11.07	0.00	438.8

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. 3.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

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. 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	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79	
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00
OPER	HS20	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79	
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00
OPER	2F1	63.87 L	49.13	49.79	0.0	0.00	0.00	0.00	
		-14.00 L	-10.77	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.63 R	65.10	69.79	0.0	0.00	0.00	0.00	
		-20.08 L	-15.45	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	87.91 R	67.62	73.79	0.0	0.00	0.00	0.00	
		-21.60 L	-16.62	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.64 L	64.34	8.79	0.0	0.00	0.00	0.00	
		-33.11 L	-25.47	28.66	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	1.76	8.54	1.76	8.54	HS 35.24	63.4
HS20	2.94	14.23	2.94	14.23	HS 58.74	105.7
2F1	4.04	21.47	4.04	21.47	0.00	60.6
3F1	3.05	14.97	3.05	14.97	0.00	70.1
4F1	2.94	13.92	2.94	13.92	0.00	79.3

5C1 3.09 9.08 3.09 9.08 0.00 123.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
1.4	17.1

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	169.3	-172.3	150.1	-191.5
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	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18			
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32		0.00	
OPER	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18			
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32		0.00	
OPER	2F1	62.90 L	48.38	52.18	0.0	0.00	0.00	0.00			
		-18.56 R	-14.28	88.93	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	79.59 L	61.22	52.18	0.0	0.00	0.00	0.00			
		-26.63 R	-20.48	91.32	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	85.01 L	65.39	48.18	0.0	0.00	0.00	0.00			
		-28.65 R	-22.04	94.53	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	80.22 L	61.71	50.18	0.0	0.00	0.00	0.00			
		-33.50 R	-25.77	90.93	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	1.86	6.24	1.65	6.94	HS 33.00	59.4
HS20	3.10	10.40	2.75	11.56	HS 55.00	99.0
2F1	4.49	15.47	3.98	17.19	0.00	59.7
3F1	3.55	10.78	3.14	11.98	0.00	72.3
4F1	3.32	10.02	2.94	11.14	0.00	79.5
5C1	3.52	8.57	3.12	9.52	0.00	124.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-2.0	0.0
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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	-16.92	9.37	-13.02	7.21	-14.95	9.16	-11.50	7.05
OPER	HS20	-16.92	9.37	-13.02	7.21	-14.95	9.16	-11.50	7.05
OPER	2F1	-10.29	5.60	-7.91	4.31	0.00	0.00	0.00	0.00
OPER	3F1	-13.23	6.61	-10.17	5.08	0.00	0.00	0.00	0.00
OPER	4F1	-13.33	5.60	-10.25	4.31	0.00	0.00	0.00	0.00
OPER	5C1	-13.30	8.25	-10.23	6.35	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.05	7.59	HS 81.00	145.8
HS20	6.75	12.65	HS 134.99	243.0
2F1	11.10	21.15	0.00	166.5
3F1	8.64	17.94	0.00	198.6
4F1	8.57	21.17	0.00	231.4
5C1	8.59	14.36	0.00	343.5

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. 3.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

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. 178.7	175.0	-160.2	175.0	-160.2	156.6	-178.7	156.6	-
OPER 297.9	279.4	-279.4	279.4	-279.4	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	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18	
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00
OPER	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18	
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00
OPER	2F1	62.90 L	48.38	52.18	0.0	0.00	0.00	0.00	
		-18.56 R	-14.28	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.59 L	61.22	52.18	0.0	0.00	0.00	0.00	
		-26.63 R	-20.48	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.01 L	65.39	48.18	0.0	0.00	0.00	0.00	
		-28.65 R	-22.04	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.22 L	61.71	50.18	0.0	0.00	0.00	0.00	
		-33.50 R	-25.77	90.93	0.0	0.00	0.00	0.00	0.00

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	6.47	1.72	6.47	HS 34.42	62.0
HS20	2.87	10.79	2.87	10.79	HS 57.36	103.3
2F1	4.15	16.05	4.15	16.05	0.00	62.2
3F1	3.28	11.19	3.28	11.19	0.00	75.4
4F1	3.07	10.40	3.07	10.40	0.00	82.9

5C1 3.25 8.89 3.25 8.89 0.00 130.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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 0.8
Superimposed Dead Load Moment 10.1

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	173.8	-167.8	154.6	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.6	257.7	-311.6

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	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58			
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00		
OPER	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58			
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00		
OPER	2F1	53.64 L	41.26	54.58	0.0	0.00	0.00	0.00			
		-23.33 R	-17.94	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.54 L	51.95	50.58	0.0	0.00	0.00	0.00			
		-33.46 R	-25.74	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.69 L	52.84	50.58	0.0	0.00	0.00	0.00			
		-36.01 R	-27.70	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.64 R	54.34	111.58	0.0	0.00	0.00	0.00			
		-35.27 R	-27.13	92.53	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	2.13	4.84	1.90	5.39	HS 37.99	68.4
HS20	3.56	8.06	3.17	8.98	HS 63.32	114.0
2F1	5.40	11.99	4.80	13.36	0.00	72.1
3F1	4.29	8.35	3.82	9.31	0.00	87.8
4F1	4.22	7.76	3.75	8.65	0.00	101.3
5C1	4.10	7.93	3.65	8.84	0.00	145.9

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
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-0.3	-3.8	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	120.5

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	-20.31	4.94	-15.62	3.80	-17.90	6.61	-13.77	5.08
OPER	HS20	-20.31	4.94	-15.62	3.80	-17.90	6.61	-13.77	5.08
OPER	2F1	-12.73	3.56	-9.79	2.74	0.00	0.00	0.00	0.00
OPER	3F1	-16.82	3.80	-12.94	2.92	0.00	0.00	0.00	0.00
OPER	4F1	-17.31	3.11	-13.32	2.39	0.00	0.00	0.00	0.00
OPER	5C1	-16.00	6.20	-12.31	4.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.94	HS 66.32	119.4
HS20	5.53	18.23	HS 110.54	199.0
2F1	8.82	33.87	0.00	132.3
3F1	6.67	31.72	0.00	153.5
4F1	6.48	38.76	0.00	175.0
5C1	7.01	19.43	0.00	280.5

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 0.8
Superimposed Dead Load Moment 10.1

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. 174.2	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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58	
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00
OPER	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58	
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00
OPER	2F1	53.64 L	41.26	54.58	0.0	0.00	0.00	0.00	
		-23.33 R	-17.94	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.54 L	51.95	50.58	0.0	0.00	0.00	0.00	
		-33.46 R	-25.74	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.69 L	52.84	50.58	0.0	0.00	0.00	0.00	
		-36.01 R	-27.70	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.64 R	54.34	111.58	0.0	0.00	0.00	0.00	
		-35.27 R	-27.13	92.53	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.57	71.2
HS20	3.30	8.37	3.30	8.37	HS 65.96	118.7
2F1	5.01	12.45	5.01	12.45	0.00	75.1
3F1	3.97	8.68	3.97	8.68	0.00	91.4
4F1	3.91	8.06	3.91	8.06	0.00	105.5

5C1	3.80	8.23	3.80	8.23	0.00	152.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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 -1.2

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	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97			
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15		
OPER	HS20	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97			
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15		
OPER	2F1	36.51 L	28.09	56.97	0.0	0.00	0.00	0.00			
		-28.09 R	-21.61	88.93	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	44.08 L	33.91	52.97	0.0	0.00	0.00	0.00			
		-40.30 R	-31.00	91.32	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	40.37 L	31.05	48.97	0.0	0.00	0.00	0.00			
		-43.36 R	-33.36	94.53	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	52.78 R	40.60	113.97	0.0	0.00	0.00	0.00			
		-37.51 R	-28.85	93.32	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	3.21	3.84	2.87	4.30	HS 57.39	103.3
HS20	5.35	6.40	4.78	7.16	HS 95.66	172.2
2F1	8.27	9.52	7.39	10.65	0.00	110.9
3F1	6.85	6.63	6.12	7.43	0.00	140.9
4F1	7.48	6.16	6.69	6.90	0.00	166.4
5C1	5.72	7.13	5.11	7.98	0.00	204.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.800

HS20 HS20

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	-66.2	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	-24.79	2.86	-19.07	2.20	-20.80	4.35	-16.00	3.35
OPER	HS20	-24.79	2.86	-19.07	2.20	-20.80	4.35	-16.00	3.35
OPER	2F1	-15.11	2.03	-11.62	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.43	2.91	-15.72	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.09	3.11	-16.22	2.39	0.00	0.00	0.00	0.00
OPER	5C1	-19.23	4.42	-14.80	3.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	16.90	HS 53.37	96.1
HS20	4.45	28.16	HS 88.95	160.1
2F1	7.30	60.39	0.00	109.5
3F1	5.39	42.11	0.00	124.1
4F1	5.23	39.40	0.00	141.2
5C1	5.73	27.72	0.00	229.3

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.	3.800		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	-
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	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97	
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15
OPER	HS20	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97	
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15
OPER	2F1	36.51 L	28.09	56.97	0.0	0.00	0.00	0.00	
		-28.09 R	-21.61	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.08 L	33.91	52.97	0.0	0.00	0.00	0.00	
		-40.30 R	-31.00	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.37 L	31.05	48.97	0.0	0.00	0.00	0.00	
		-43.36 R	-33.36	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.78 R	40.60	113.97	0.0	0.00	0.00	0.00	
		-37.51 R	-28.85	93.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.68	107.4
HS20	4.97	6.66	4.97	6.66	HS 99.46	179.0
2F1	7.69	9.90	7.69	9.90	0.00	115.3
3F1	6.37	6.90	6.37	6.90	0.00	146.5
4F1	6.95	6.41	6.95	6.41	0.00	173.1

5C1

5.32

7.41

5.32

7.41

0.00

212.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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
-1.4 -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	191.4	-150.2	172.2	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	319.0	-250.3	287.0	-282.3

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	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36			
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79		
OPER	HS20	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36			
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79		
OPER	2F1	12.89 L	9.92	59.36	0.0	0.00	0.00	0.00			
		-32.86 R	-25.27	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.63 R	9.72	115.23	0.0	0.00	0.00	0.00			
		-47.14 R	-36.26	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	13.43 R	10.33	119.23	0.0	0.00	0.00	0.00			
		-50.72 R	-39.02	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	26.83 R	20.64	116.36	0.0	0.00	0.00	0.00			
		-41.47 R	-31.90	95.71	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	8.08	2.75	7.27	3.10	HS 54.95	98.9
HS20	13.47	4.58	12.12	5.16	HS 91.59	164.9
2F1	24.74	7.62	22.26	8.59	0.00	114.3
3F1	25.25	5.31	22.72	5.99	0.00	122.1
4F1	23.75	4.93	21.37	5.57	0.00	133.2
5C1	11.89	6.04	10.70	6.81	0.00	241.5

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.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-7.5	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.7
OPER	151.3	-108.3	124.5

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	-29.44	2.99	-22.64	2.30	-23.57	3.15	-18.13	2.42
OPER	HS20	-29.44	2.99	-22.64	2.30	-23.57	3.15	-18.13	2.42
OPER	2F1	-17.33	2.03	-13.33	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-23.92	2.91	-18.40	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-24.65	3.13	-18.96	2.41	0.00	0.00	0.00	0.00
OPER	5C1	-22.48	2.94	-17.29	2.26	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.73	HS 44.14	79.4
HS20	3.68	39.55	HS 73.56	132.4
2F1	6.25	61.37	0.00	93.7
3F1	4.53	42.79	0.00	104.1
4F1	4.39	39.78	0.00	118.6
5C1	4.82	42.32	0.00	192.6

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. 3.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.4 -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	-
bend								
INV. 156.6	160.3	-175.0	160.3	-175.0	178.6	-156.6	178.6	-
OPER 261.1	279.4	-279.4	279.4	-279.4	297.7	-261.1	297.7	-

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	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	HS20	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	2F1	12.89 L	9.92	59.36	0.0	0.00	0.00	0.00	
		-32.86 R	-25.27	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.63 R	9.72	115.23	0.0	0.00	0.00	0.00	
		-47.14 R	-36.26	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.43 R	10.33	119.23	0.0	0.00	0.00	0.00	
		-50.72 R	-39.02	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.83 R	20.64	116.36	0.0	0.00	0.00	0.00	
		-41.47 R	-31.90	95.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.54	2.87	7.54	2.87	HS 57.31	103.2
HS20	12.57	4.78	12.57	4.78	HS 95.52	171.9
2F1	23.09	7.95	23.09	7.95	0.00	119.2
3F1	23.57	5.54	23.57	5.54	0.00	127.4
4F1	22.17	5.15	22.17	5.15	0.00	139.0

5C1	11.10	6.30	11.10	6.30	0.00	251.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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
-3.0	-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	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	2F1	10.25 L	7.89	30.66	0.0	0.00	0.00	0.00		0.00	
		-37.68 L	-28.98	54.58	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.70 L	11.31	28.27	0.0	0.00	0.00	0.00		0.00	
		-61.48 R	-47.29	76.53	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.82 L	12.17	25.05	0.0	0.00	0.00	0.00		0.00	
		-71.69 R	-55.15	76.97	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	12.60 R	9.69	154.63	0.0	0.00	0.00	0.00		0.00	
		-59.77 L	-45.98	66.93	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	13.24	1.44	12.00	1.65	HS 28.87	52.0
HS20	22.07	2.41	20.00	2.74	HS 48.12	86.6
2F1	33.24	6.07	30.12	6.91	0.00	91.0
3F1	23.17	3.72	21.00	4.24	0.00	85.5
4F1	21.54	3.19	19.52	3.63	0.00	86.1
5C1	27.04	3.82	24.50	4.36	0.00	153.0

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.8	63.8
OPER	151.3	-106.3	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	-29.44	33.80	-22.64	26.00	-23.57	26.06	-18.13	20.04
OPER	HS20	-29.44	33.80	-22.64	26.00	-23.57	26.06	-18.13	20.04
OPER	2F1	-17.33	19.29	-13.33	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-23.92	27.12	-18.40	20.86	0.00	0.00	0.00	0.00
OPER	4F1	-24.65	28.50	-18.96	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-22.48	25.56	-17.29	19.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
HS20	3.14	3.15	HS 62.88	113.2
2F1	5.51	5.52	0.00	82.6
3F1	3.92	3.92	0.00	90.1
4F1	3.73	3.73	0.00	100.6
5C1	4.16	4.16	0.00	166.2

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. 4.000 2F1
3F1
4F1
5C1

Dead Load Moment -3.0
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	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	2F1	10.25 L	7.89	30.66	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.70 L	11.31	28.27	0.0	0.00	0.00	0.00	
		-61.48 R	-47.29	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.82 L	12.17	25.05	0.0	0.00	0.00	0.00	
		-71.69 R	-55.15	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.60 R	9.69	154.63	0.0	0.00	0.00	0.00	
		-59.77 L	-45.98	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
HS20	20.69	2.52	20.69	2.52	HS 50.38	90.7
2F1	31.17	6.35	31.17	6.35	0.00	95.3
3F1	21.73	3.89	21.73	3.89	0.00	89.5
4F1	20.20	3.34	20.20	3.34	0.00	90.1

5C1	25.35	4.00	25.35	4.00	0.00	160.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.726

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		24.74		104.9

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	11.96	1.00	33000.	73.86	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
-3.0	-37.0

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	204.4	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	2F1	10.25 L	7.89	30.66	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	54.58	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	14.70 L	11.31	28.27	0.0	0.00	0.00	0.00			
		-61.48 R	-47.29	76.53	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	15.82 L	12.17	25.05	0.0	0.00	0.00	0.00			
		-71.69 R	-55.15	76.97	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	12.60 R	9.69	154.63	0.0	0.00	0.00	0.00			
		-59.77 L	-45.98	66.93	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	13.24	1.44	12.00	1.65	HS 28.87	52.0
HS20	22.07	2.41	20.00	2.74	HS 48.12	86.6
2F1	33.24	6.07	30.12	6.91	0.00	91.0
3F1	23.17	3.72	21.00	4.24	0.00	85.5
4F1	21.54	3.19	19.52	3.63	0.00	86.1
5C1	27.04	3.82	24.50	4.36	0.00	153.0

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-9.3	9.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.8	63.8
OPER	151.3	-106.3	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	-33.81	33.80	-26.01	26.00	-26.09	26.06	-20.07	20.04
OPER	HS20	-33.81	33.80	-26.01	26.00	-26.09	26.06	-20.07	20.04
OPER	2F1	-19.29	19.29	-14.84	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-27.13	27.12	-20.87	20.86	0.00	0.00	0.00	0.00
OPER	4F1	-28.51	28.50	-21.93	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-25.58	25.56	-19.68	19.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
HS20	3.14	3.15	HS 62.88	113.2
2F1	5.51	5.52	0.00	82.6
3F1	3.92	3.92	0.00	90.1
4F1	3.73	3.73	0.00	100.6
5C1	4.16	4.16	0.00	166.2

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. 4.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	2F1	10.25 L	7.89	30.66	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.70 L	11.31	28.27	0.0	0.00	0.00	0.00	
		-61.48 R	-47.29	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.82 L	12.17	25.05	0.0	0.00	0.00	0.00	
		-71.69 R	-55.15	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.60 R	9.69	154.63	0.0	0.00	0.00	0.00	
		-59.77 L	-45.98	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
HS20	20.69	2.52	20.69	2.52	HS 50.38	90.7
2F1	31.17	6.35	31.17	6.35	0.00	95.3
3F1	21.73	3.89	21.73	3.89	0.00	89.5
4F1	20.20	3.34	20.20	3.34	0.00	90.1

5C1	25.35	4.00	25.35	4.00	0.00	160.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.830

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.74		104.9

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-1.4 -17.2

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	191.5	-150.0	172.3	-169.2
OPER	300.6C	-268.7	268.7	-300.6C	319.2	-250.1	287.2	-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	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14			
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71		
OPER	HS20	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14			
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71		
OPER	2F1	12.92 R	9.94	84.14	0.0	0.00	0.00	0.00			
		-32.90 L	-25.31	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.84 L	9.88	28.27	0.0	0.00	0.00	0.00			
		-47.20 L	-36.31	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	13.65 L	10.50	24.27	0.0	0.00	0.00	0.00			
		-50.79 L	-39.07	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	27.03 L	20.79	27.14	0.0	0.00	0.00	0.00			
		-41.54 L	-31.95	47.79	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	7.98	2.74	7.18	3.09	HS 54.83	98.7
HS20	13.29	4.57	11.96	5.15	HS 91.38	164.5
2F1	24.71	7.60	22.24	8.57	0.00	114.0
3F1	24.86	5.30	22.37	5.97	0.00	121.9
4F1	23.39	4.92	21.05	5.55	0.00	132.9
5C1	11.81	6.02	10.63	6.79	0.00	240.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.6	65.0
OPER	151.3	-124.4	108.4

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	-2.85	29.42	-2.19	22.63	-3.15	23.54	-2.42	18.10
OPER	HS20	-2.85	29.42	-2.19	22.63	-3.15	23.54	-2.42	18.10
OPER	2F1	-2.00	17.32	-1.53	13.32	0.00	0.00	0.00	0.00
OPER	3F1	-2.86	23.91	-2.20	18.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	24.63	-2.35	18.95	0.00	0.00	0.00	0.00
OPER	5C1	-2.90	22.46	-2.23	17.28	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.72	2.21	HS 44.20	79.6
HS20	39.53	3.68	HS 73.67	132.6
2F1	62.33	6.26	0.00	93.9
3F1	43.45	4.53	0.00	104.3
4F1	40.64	4.40	0.00	118.8
5C1	42.83	4.82	0.00	193.0

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. 4.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.4 -17.2

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. 156.5	160.2	-175.1	160.2	-175.1	178.8	-156.5	178.8	-
OPER 260.8	279.4	-279.4	279.4	-279.4	298.0	-260.8	298.0	-

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	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14	
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71
OPER	HS20	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14	
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71
OPER	2F1	12.92 R	9.94	84.14	0.0	0.00	0.00	0.00	
		-32.90 L	-25.31	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.84 L	9.88	28.27	0.0	0.00	0.00	0.00	
		-47.20 L	-36.31	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.65 L	10.50	24.27	0.0	0.00	0.00	0.00	
		-50.79 L	-39.07	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	27.03 L	20.79	27.14	0.0	0.00	0.00	0.00	
		-41.54 L	-31.95	47.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.45	2.86	7.45	2.86	HS 57.19	102.9
HS20	12.41	4.76	12.41	4.76	HS 95.31	171.6
2F1	23.07	7.93	23.07	7.93	0.00	118.9
3F1	23.21	5.53	23.21	5.53	0.00	127.1
4F1	21.83	5.14	21.83	5.14	0.00	138.6

5C1 11.02 6.28 11.02 6.28 0.00 251.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.830

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.74		104.9

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-0.2	-1.7

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	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 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	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	HS20	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	2F1	36.52 R	28.09	86.53	0.0	0.00	0.00	0.00	
		-28.12 L	-21.63	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.10 R	33.92	90.53	0.0	0.00	0.00	0.00	
		-40.35 L	-31.04	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.38 R	31.07	94.53	0.0	0.00	0.00	0.00	
		-43.42 L	-33.40	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.93 L	40.71	29.53	0.0	0.00	0.00	0.00	
		-37.55 L	-28.89	50.18	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	3.21	3.83	2.87	4.29	HS 57.48	103.5
HS20	5.36	6.38	4.79	7.15	HS 95.80	172.4
2F1	8.28	9.49	7.41	10.62	0.00	111.1
3F1	6.86	6.61	6.13	7.41	0.00	141.1
4F1	7.49	6.15	6.70	6.88	0.00	165.9
5C1	5.72	7.11	5.11	7.96	0.00	204.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.200

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	-73.4	66.2
OPER	151.3	-122.4	110.4

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	-2.85	24.77	-2.19	19.06	-4.38	20.77	-3.37	15.98
OPER	HS20	-2.85	24.77	-2.19	19.06	-4.38	20.77	-3.37	15.98
OPER	2F1	-2.00	15.10	-1.53	11.61	0.00	0.00	0.00	0.00
OPER	3F1	-2.86	20.42	-2.20	15.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	21.07	-2.35	16.21	0.00	0.00	0.00	0.00
OPER	5C1	-4.40	19.22	-3.38	14.78	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.75	2.67	HS 53.45	96.2
HS20	27.91	4.45	HS 89.09	160.4
2F1	61.34	7.31	0.00	109.6
3F1	42.76	5.40	0.00	124.3
4F1	39.99	5.24	0.00	141.4
5C1	27.85	5.74	0.00	229.7

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. 4.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.7

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. 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 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	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	HS20	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	2F1	36.52 R	28.09	86.53	0.0	0.00	0.00	0.00	
		-28.12 L	-21.63	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.10 R	33.92	90.53	0.0	0.00	0.00	0.00	
		-40.35 L	-31.04	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.38 R	31.07	94.53	0.0	0.00	0.00	0.00	
		-43.42 L	-33.40	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.93 L	40.71	29.53	0.0	0.00	0.00	0.00	
		-37.55 L	-28.89	50.18	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.76	107.6
HS20	4.98	6.64	4.98	6.64	HS 99.61	179.3
2F1	7.70	9.87	7.70	9.87	0.00	115.5
3F1	6.38	6.88	6.38	6.88	0.00	146.7
4F1	6.96	6.39	6.96	6.39	0.00	172.6

5C1 5.31 7.39 5.31 7.39 0.00 212.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.830

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.74		104.9

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.7	9.5

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.4	-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	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93			
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00		
OPER	HS20	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93			
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00		
OPER	2F1	53.63 R	41.25	88.93	0.0	0.00	0.00	0.00			
		-23.35 L	-17.96	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.52 R	51.94	92.93	0.0	0.00	0.00	0.00			
		-33.49 L	-25.76	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.68 R	52.83	92.93	0.0	0.00	0.00	0.00			
		-36.04 L	-27.72	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.71 L	54.39	31.93	0.0	0.00	0.00	0.00			
		-35.25 L	-27.12	50.97	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	2.14	4.82	1.90	5.37	HS 38.10	68.6
HS20	3.57	8.03	3.17	8.96	HS 63.49	114.3
2F1	5.42	11.94	4.82	13.31	0.00	72.3
3F1	4.30	8.33	3.83	9.28	0.00	88.0
4F1	4.23	7.74	3.76	8.62	0.00	101.6
5C1	4.11	7.91	3.65	8.82	0.00	146.2

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.	4.300		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	112.3

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	-4.94	20.30	-3.80	15.62	-6.65	17.86	-5.11	13.74
OPER	HS20	-4.94	20.30	-3.80	15.62	-6.65	17.86	-5.11	13.74
OPER	2F1	-3.56	12.72	-2.74	9.78	0.00	0.00	0.00	0.00
OPER	3F1	-3.80	16.81	-2.93	12.93	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	17.30	-2.35	13.31	0.00	0.00	0.00	0.00
OPER	5C1	-6.20	16.00	-4.77	12.31	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.87	3.32	HS 66.40	119.5
HS20	18.11	5.53	HS 110.67	199.2
2F1	33.80	8.83	0.00	132.5
3F1	31.65	6.68	0.00	153.7
4F1	39.35	6.49	0.00	175.3
5C1	19.43	7.02	0.00	280.9

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.	4.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.7	9.5

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. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	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 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	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93	
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00
OPER	HS20	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93	
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00
OPER	2F1	53.63 R	41.25	88.93	0.0	0.00	0.00	0.00	
		-23.35 L	-17.96	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.52 R	51.94	92.93	0.0	0.00	0.00	0.00	
		-33.49 L	-25.76	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.68 R	52.83	92.93	0.0	0.00	0.00	0.00	
		-36.04 L	-27.72	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.71 L	54.39	31.93	0.0	0.00	0.00	0.00	
		-35.25 L	-27.12	50.97	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.01	1.98	5.01	HS 39.68	71.4
HS20	3.31	8.34	3.31	8.34	HS 66.13	119.0
2F1	5.02	12.40	5.02	12.40	0.00	75.3
3F1	3.99	8.65	3.99	8.65	0.00	91.7
4F1	3.92	8.04	3.92	8.04	0.00	105.8

5C1 3.81 8.22 3.81 8.22 0.00 152.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.830

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.74		104.9

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	11.96	1.00	33000.	73.86	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 1.3
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	169.9	-171.7	150.7	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-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	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32			
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00		
OPER	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32			
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00		
OPER	2F1	62.86 R	48.36	91.32	0.0	0.00	0.00	0.00			
		-18.57 L	-14.28	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.55 R	61.19	91.32	0.0	0.00	0.00	0.00			
		-26.64 L	-20.49	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	84.96 R	65.35	95.32	0.0	0.00	0.00	0.00			
		-28.67 L	-22.05	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.21 R	61.70	93.32	0.0	0.00	0.00	0.00			
		-33.52 L	-25.78	51.84	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	6.22	1.66	6.91	HS 33.12	59.6
HS20	3.11	10.37	2.76	11.52	HS 55.21	99.4
2F1	4.50	15.41	3.99	17.13	0.00	59.9
3F1	3.56	10.74	3.16	11.94	0.00	72.6
4F1	3.33	9.98	2.96	11.10	0.00	79.8
5C1	3.53	8.54	3.13	9.49	0.00	125.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.4	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	-9.37	16.91	-7.21	13.01	-9.20	14.91	-7.08	11.47
OPER	HS20	-9.37	16.91	-7.21	13.01	-9.20	14.91	-7.08	11.47
OPER	2F1	-5.61	10.28	-4.32	7.91	0.00	0.00	0.00	0.00
OPER	3F1	-6.62	13.21	-5.09	10.16	0.00	0.00	0.00	0.00
OPER	4F1	-5.61	13.31	-4.31	10.24	0.00	0.00	0.00	0.00
OPER	5C1	-8.27	13.30	-6.36	10.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.58	4.05	HS 81.10	146.0
HS20	12.64	6.76	HS 135.16	243.3
2F1	21.10	11.12	0.00	166.8
3F1	17.90	8.65	0.00	199.0
4F1	21.12	8.59	0.00	231.8
5C1	14.32	8.60	0.00	343.9

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. 4.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 16.2

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. 178.1	174.6	-160.6	174.6	-160.6	157.1	-178.1	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

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	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32	
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00
OPER	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32	
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00
OPER	2F1	62.86 R	48.36	91.32	0.0	0.00	0.00	0.00	
		-18.57 L	-14.28	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.55 R	61.19	91.32	0.0	0.00	0.00	0.00	
		-26.64 L	-20.49	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	84.96 R	65.35	95.32	0.0	0.00	0.00	0.00	
		-28.67 L	-22.05	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.21 R	61.70	93.32	0.0	0.00	0.00	0.00	
		-33.52 L	-25.78	51.84	0.0	0.00	0.00	0.00	0.00

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	6.45	1.73	6.45	HS 34.54	62.2
HS20	2.88	10.76	2.88	10.76	HS 57.57	103.6
2F1	4.17	15.99	4.17	15.99	0.00	62.5
3F1	3.29	11.15	3.29	11.15	0.00	75.7
4F1	3.08	10.36	3.08	10.36	0.00	83.2

5C1	3.27	8.86	3.27	8.86	0.00	130.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.830

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.74		104.9

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
 Moment Moment
 1.5 18.6

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	168.3	-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 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	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	HS20	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	2F1	63.81 L	49.09	73.71	0.0	0.00	0.00	0.00	
		-13.79 L	-10.61	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.54 R	65.03	93.71	0.0	0.00	0.00	0.00	
		-19.79 L	-15.22	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	87.81 R	67.55	97.71	0.0	0.00	0.00	0.00	
		-21.29 L	-16.38	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	82.99 L	63.84	32.71	0.0	0.00	0.00	0.00	
		-32.87 L	-25.28	53.45	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	1.92	8.12	1.70	9.02	HS 33.96	61.1
HS20	3.19	13.53	2.83	15.03	HS 56.60	101.9
2F1	4.40	20.93	3.90	23.25	0.00	58.4
3F1	3.32	14.59	2.94	16.21	0.00	67.6
4F1	3.19	13.56	2.83	15.06	0.00	76.4
5C1	3.38	8.78	2.99	9.76	0.00	119.8

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.	4.500		2F1
			3F1
			4F1
			5C1

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

0.0	0.0	0.1
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Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-69.9 69.8
OPER	151.3	-116.5 116.3

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.	w/imp.	w/o imp.	w/imp.	w/o imp.
		(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)	(-) (+)
INV.	HS20	-13.38 13.38	-10.29 10.29	-11.98 12.00	-9.21 9.23				
OPER	HS20	-13.38 13.38	-10.29 10.29	-11.98 12.00	-9.21 9.23				
OPER	2F1	-7.88 7.88	-6.06 6.06	0.00 0.00	0.00 0.00				
OPER	3F1	-9.78 9.78	-7.52 7.52	0.00 0.00	0.00 0.00				
OPER	4F1	-9.24 9.24	-7.11 7.10	0.00 0.00	0.00 0.00				
OPER	5C1	-10.57 10.57	-8.13 8.13	0.00 0.00	0.00 0.00				

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	5.22	5.21	HS 104.28	187.7
HS20	8.70	8.69	HS 173.79	312.8
2F1	14.78	14.76	0.00	221.4
3F1	11.90	11.89	0.00	273.5
4F1	12.61	12.59	0.00	340.0
5C1	11.02	11.01	0.00	440.2

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. 4.500 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. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.5	279.4	-279.4	279.4	-279.4	259.3	-299.5	259.3	-

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	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	HS20	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	2F1	63.81 L	49.09	73.71	0.0	0.00	0.00	0.00	
		-13.79 L	-10.61	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.54 R	65.03	93.71	0.0	0.00	0.00	0.00	
		-19.79 L	-15.22	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	87.81 R	67.55	97.71	0.0	0.00	0.00	0.00	
		-21.29 L	-16.38	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	82.99 L	63.84	32.71	0.0	0.00	0.00	0.00	
		-32.87 L	-25.28	53.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	8.42	1.77	8.42	HS 35.43	63.8
HS20	2.95	14.03	2.95	14.03	HS 59.05	106.3
2F1	4.06	21.71	4.06	21.71	0.00	61.0
3F1	3.07	15.14	3.07	15.14	0.00	70.5
4F1	2.95	14.07	2.95	14.07	0.00	79.7

5C1	3.12	9.11	3.12	9.11	0.00	125.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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 1.3
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	169.7	-171.8	150.5	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	282.9	-286.4	250.9	-318.4

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	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10			
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00		
OPER	HS20	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10			
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00		
OPER	2F1	62.86 L	48.35	76.10	0.0	0.00	0.00	0.00			
		-18.55 R	-14.27	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.54 L	61.18	76.10	0.0	0.00	0.00	0.00			
		-26.61 R	-20.47	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	84.95 L	65.35	72.10	0.0	0.00	0.00	0.00			
		-28.64 R	-22.03	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.17 L	61.67	74.10	0.0	0.00	0.00	0.00			
		-33.38 R	-25.68	114.84	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	6.23	1.65	6.92	HS 33.10	59.6
HS20	3.11	10.38	2.76	11.54	HS 55.16	99.3
2F1	4.50	15.44	3.99	17.16	0.00	59.9
3F1	3.56	10.76	3.15	11.96	0.00	72.6
4F1	3.33	10.00	2.95	11.12	0.00	79.7
5C1	3.53	8.58	3.13	9.54	0.00	125.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.600

HS20 HS20

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 (-)	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	-16.91	9.37	-13.01	7.21	-14.88	9.23	-11.45	7.10
OPER	HS20	-16.91	9.37	-13.01	7.21	-14.88	9.23	-11.45	7.10
OPER	2F1	-10.28	5.61	-7.91	4.32	0.00	0.00	0.00	0.00
OPER	3F1	-13.21	6.62	-10.16	5.09	0.00	0.00	0.00	0.00
OPER	4F1	-13.31	5.61	-10.24	4.31	0.00	0.00	0.00	0.00
OPER	5C1	-13.30	8.27	-10.23	6.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.06	7.58	HS 81.17	146.1
HS20	6.76	12.63	HS 135.29	243.5
2F1	11.13	21.09	0.00	167.0
3F1	8.66	17.89	0.00	199.1
4F1	8.59	21.11	0.00	232.0
5C1	8.60	14.31	0.00	344.1

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. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
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. 178.3	174.7	-160.5	174.7	-160.5	157.0	-178.3	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

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	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10	
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00
OPER	HS20	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10	
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00
OPER	2F1	62.86 L	48.35	76.10	0.0	0.00	0.00	0.00	
		-18.55 R	-14.27	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.54 L	61.18	76.10	0.0	0.00	0.00	0.00	
		-26.61 R	-20.47	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	84.95 L	65.35	72.10	0.0	0.00	0.00	0.00	
		-28.64 R	-22.03	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.17 L	61.67	74.10	0.0	0.00	0.00	0.00	
		-33.38 R	-25.68	114.84	0.0	0.00	0.00	0.00	0.00

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	6.46	1.73	6.46	HS 34.51	62.1
HS20	2.88	10.77	2.88	10.77	HS 57.52	103.5
2F1	4.16	16.02	4.16	16.02	0.00	62.4
3F1	3.29	11.17	3.29	11.17	0.00	75.7
4F1	3.08	10.38	3.08	10.38	0.00	83.2

5C1	3.26	8.90	3.26	8.90	0.00	130.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.8	9.9

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	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.3	258.0	-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	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49			
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00		
OPER	HS20	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49			
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00		
OPER	2F1	53.62 L	41.25	78.49	0.0	0.00	0.00	0.00			
		-23.32 R	-17.94	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.51 L	51.93	74.49	0.0	0.00	0.00	0.00			
		-33.46 R	-25.74	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.67 L	52.82	74.49	0.0	0.00	0.00	0.00			
		-36.00 R	-27.69	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.62 R	54.32	135.49	0.0	0.00	0.00	0.00			
		-35.22 R	-27.10	116.45	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	2.14	4.83	1.90	5.39	HS 38.03	68.5
HS20	3.56	8.05	3.17	8.98	HS 63.38	114.1
2F1	5.41	11.98	4.81	13.35	0.00	72.2
3F1	4.30	8.35	3.82	9.31	0.00	87.9
4F1	4.22	7.76	3.76	8.65	0.00	101.4
5C1	4.11	7.93	3.65	8.84	0.00	146.1

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 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	-20.30	4.94	-15.62	3.80	-17.84	6.68	-13.72	5.14
OPER	HS20	-20.30	4.94	-15.62	3.80	-17.84	6.68	-13.72	5.14
OPER	2F1	-12.72	3.56	-9.78	2.74	0.00	0.00	0.00	0.00
OPER	3F1	-16.81	3.80	-12.93	2.93	0.00	0.00	0.00	0.00
OPER	4F1	-17.30	3.06	-13.31	2.36	0.00	0.00	0.00	0.00
OPER	5C1	-16.00	6.20	-12.31	4.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.81	HS 66.46	119.6
HS20	5.54	18.02	HS 110.77	199.4
2F1	8.84	33.77	0.00	132.6
3F1	6.69	31.63	0.00	153.9
4F1	6.50	39.27	0.00	175.5
5C1	7.03	19.42	0.00	281.1

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 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	+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 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	81.40 L	62.61 R	60.49	0.0	61.60	47.38	88.49	
		-34.69 R	-26.68 L	128.45	0.0	-28.14	-21.65	105.23	0.00
OPER	HS20	81.40 L	62.61 R	60.49	0.0	61.60	47.38	88.49	
		-34.69 R	-26.68 L	128.45	0.0	-28.14	-21.65	105.23	0.00
OPER	2F1	53.62 L	41.25 R	78.49	0.0	0.00	0.00	0.00	
		-23.32 R	-17.94 L	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.51 L	51.93 R	74.49	0.0	0.00	0.00	0.00	
		-33.46 R	-25.74 L	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.67 L	52.82 R	74.49	0.0	0.00	0.00	0.00	
		-36.00 R	-27.69 L	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.62 L	54.32 R	135.49	0.0	0.00	0.00	0.00	
		-35.22 R	-27.10 L	116.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.61	71.3
HS20	3.30	8.36	3.30	8.36	HS 66.02	118.8
2F1	5.01	12.44	5.01	12.44	0.00	75.2
3F1	3.98	8.67	3.98	8.67	0.00	91.5
4F1	3.91	8.06	3.91	8.06	0.00	105.7

5C1 3.81 8.24 3.81 8.24 0.00 152.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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 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	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-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	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88			
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07		
OPER	HS20	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88			
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07		
OPER	2F1	36.51 L	28.09	80.88	0.0	0.00	0.00	0.00	0.00		
		-28.09 R	-21.61	112.84	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	44.08 L	33.91	76.88	0.0	0.00	0.00	0.00	0.00		
		-40.30 R	-31.00	115.23	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	40.37 L	31.05	72.88	0.0	0.00	0.00	0.00	0.00		
		-43.37 R	-33.36	118.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	52.79 R	40.61	137.88	0.0	0.00	0.00	0.00	0.00		
		-37.51 R	-28.86	117.23	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	3.21	3.84	2.87	4.30	HS 57.34	103.2
HS20	5.34	6.40	4.78	7.17	HS 95.57	172.0
2F1	8.26	9.52	7.39	10.66	0.00	110.8
3F1	6.84	6.64	6.12	7.43	0.00	140.7
4F1	7.47	6.17	6.68	6.91	0.00	166.6
5C1	5.72	7.13	5.11	7.99	0.00	204.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.4	-5.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.3	73.4
OPER	151.3	-110.5	122.3

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	-24.77	2.85	-19.06	2.19	-20.74	4.41	-15.96	3.40
OPER	HS20	-24.77	2.85	-19.06	2.19	-20.74	4.41	-15.96	3.40
OPER	2F1	-15.10	2.00	-11.61	1.54	0.00	0.00	0.00	0.00
OPER	3F1	-20.42	2.87	-15.71	2.20	0.00	0.00	0.00	0.00
OPER	4F1	-21.08	3.06	-16.21	2.36	0.00	0.00	0.00	0.00
OPER	5C1	-19.22	4.40	-14.79	3.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	16.62	HS 53.50	96.3
HS20	4.46	27.71	HS 89.17	160.5
2F1	7.32	61.22	0.00	109.7
3F1	5.41	42.67	0.00	124.4
4F1	5.24	39.92	0.00	141.5
5C1	5.75	27.81	0.00	229.8

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. 4.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -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. 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	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88	
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07
OPER	HS20	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88	
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07
OPER	2F1	36.51 L	28.09	80.88	0.0	0.00	0.00	0.00	
		-28.09 R	-21.61	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.08 L	33.91	76.88	0.0	0.00	0.00	0.00	
		-40.30 R	-31.00	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.37 L	31.05	72.88	0.0	0.00	0.00	0.00	
		-43.37 R	-33.36	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.79 R	40.61	137.88	0.0	0.00	0.00	0.00	
		-37.51 R	-28.86	117.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
HS20	4.97	6.66	4.97	6.66	HS 99.37	178.9
2F1	7.68	9.91	7.68	9.91	0.00	115.2
3F1	6.36	6.91	6.36	6.91	0.00	146.3
4F1	6.95	6.42	6.95	6.42	0.00	173.3

5C1

5.31

7.42

5.31

7.42

0.00

212.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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
-1.3	-16.3

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	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-283.0

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	16.33	L	12.56	65.28	0.0	23.90	18.39	93.28		
		-54.67	L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71	
OPER	HS20	16.33	L	12.56	65.28	0.0	23.90	18.39	93.28		
		-54.67	L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71	
OPER	2F1	12.91	L	9.93	83.28	0.0	0.00	0.00	0.00		
		-32.87	R	-25.28	112.84	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	12.65	R	9.73	139.15	0.0	0.00	0.00	0.00		
		-47.15	R	-36.27	115.23	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	13.45	R	10.34	143.15	0.0	0.00	0.00	0.00		
		-50.74	R	-39.03	118.45	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	26.85	R	20.66	140.28	0.0	0.00	0.00	0.00		
		-41.49	R	-31.92	119.63	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	7.99	2.76	7.19	3.11	HS 55.11	99.2
HS20	13.32	4.59	11.98	5.18	HS 91.84	165.3
2F1	24.66	7.64	22.18	8.61	0.00	114.6
3F1	25.16	5.32	22.63	6.00	0.00	122.5
4F1	23.67	4.95	21.29	5.58	0.00	133.6
5C1	11.85	6.05	10.66	6.82	0.00	242.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

4.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.1	74.6
OPER	151.3	-108.5	124.3

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	-29.42	2.97	-22.63	2.28	-23.51	3.18	-18.08	2.44
OPER	HS20	-29.42	2.97	-22.63	2.28	-23.51	3.18	-18.08	2.44
OPER	2F1	-17.32	2.00	-13.32	1.54	0.00	0.00	0.00	0.00
OPER	3F1	-23.91	2.87	-18.39	2.20	0.00	0.00	0.00	0.00
OPER	4F1	-24.64	3.08	-18.95	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-22.47	2.91	-17.29	2.24	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.46	HS 44.24	79.6
HS20	3.69	39.10	HS 73.73	132.7
2F1	6.26	62.21	0.00	93.9
3F1	4.54	43.36	0.00	104.3
4F1	4.40	40.30	0.00	118.9
5C1	4.83	42.76	0.00	193.1

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. 4.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -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. 157.1	160.6	-174.7	160.6	-174.7	178.2	-157.1	178.2	-
OPER 261.8	279.4	-279.4	279.4	-279.4	297.0	-261.8	297.0	-

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	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28	
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71
OPER	HS20	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28	
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71
OPER	2F1	12.91 L	9.93	83.28	0.0	0.00	0.00	0.00	
		-32.87 R	-25.28	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.65 R	9.73	139.15	0.0	0.00	0.00	0.00	
		-47.15 R	-36.27	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.45 R	10.34	143.15	0.0	0.00	0.00	0.00	
		-50.74 R	-39.03	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.85 R	20.66	140.28	0.0	0.00	0.00	0.00	
		-41.49 R	-31.92	119.63	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.46	2.87	7.46	2.87	HS 57.46	103.4
HS20	12.43	4.79	12.43	4.79	HS 95.77	172.4
2F1	23.01	7.97	23.01	7.97	0.00	119.5
3F1	23.48	5.55	23.48	5.55	0.00	127.7
4F1	22.09	5.16	22.09	5.16	0.00	139.3

5C1	11.06	6.31	11.06	6.31	0.00	252.4
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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
-2.9	-35.9

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	203.7	-137.9	184.5	-157.1
OPER	300.6C	-268.7	268.7	-300.6C	339.5	-229.8	307.5	-261.8

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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10		105.23	
OPER	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10		105.23	
OPER	2F1	10.10 L	7.77	54.58	0.0	0.00	0.00	0.00		0.00	
		-37.64 L	-28.95	78.49	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.48 L	11.14	52.18	0.0	0.00	0.00	0.00		0.00	
		-61.44 R	-47.26	100.45	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.59 L	11.99	48.97	0.0	0.00	0.00	0.00		0.00	
		-71.64 R	-55.11	100.88	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	12.66 L	9.74	12.79	0.0	0.00	0.00	0.00		0.00	
		-59.77 R	-45.98	100.49	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	12.98	1.45	11.76	1.65	HS 29.03	52.3
HS20	21.64	2.42	19.60	2.76	HS 48.39	87.1
2F1	33.63	6.11	30.46	6.95	0.00	91.6
3F1	23.44	3.74	21.23	4.26	0.00	86.0
4F1	21.78	3.21	19.73	3.65	0.00	86.6
5C1	26.81	3.85	24.28	4.38	0.00	153.8

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.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-7.3	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.9	63.9
OPER	151.3	-106.5	106.5

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	-29.42	33.80	-22.63	26.00	-23.51	26.03	-18.08	20.02
OPER	HS20	-29.42	33.80	-22.63	26.00	-23.51	26.03	-18.08	20.02
OPER	2F1	-17.32	19.29	-13.32	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-23.91	27.12	-18.39	20.86	0.00	0.00	0.00	0.00
OPER	4F1	-24.64	28.50	-18.95	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-22.47	25.57	-17.29	19.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.89	1.89	HS 37.81	68.1
HS20	3.15	3.15	HS 63.02	113.4
2F1	5.52	5.52	0.00	82.8
3F1	3.93	3.93	0.00	90.3
4F1	3.74	3.74	0.00	100.9
5C1	4.16	4.16	0.00	166.6

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. 5.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -35.9

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. 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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	2F1	10.10 L	7.77	54.58	0.0	0.00	0.00	0.00	
		-37.64 L	-28.95	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.48 L	11.14	52.18	0.0	0.00	0.00	0.00	
		-61.44 R	-47.26	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.59 L	11.99	48.97	0.0	0.00	0.00	0.00	
		-71.64 R	-55.11	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.66 L	9.74	12.79	0.0	0.00	0.00	0.00	
		-59.77 R	-45.98	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.17	1.52	12.17	1.52	HS 30.39	54.7
HS20	20.28	2.53	20.28	2.53	HS 50.65	91.2
2F1	31.52	6.39	31.52	6.39	0.00	95.9
3F1	21.97	3.91	21.97	3.91	0.00	90.0
4F1	20.42	3.36	20.42	3.36	0.00	90.7

5C1 25.13 4.02 25.13 4.02 0.00 161.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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
-2.9 -35.9

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	203.7	-137.9	184.5	-157.1
OPER	300.6C	-268.7	268.7	-300.6C	339.5	-229.8	307.5	-261.8

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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	2F1	10.10 L	7.77	54.58	0.0	0.00	0.00	0.00			
		-37.64 L	-28.95	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.48 L	11.14	52.18	0.0	0.00	0.00	0.00			
		-61.44 R	-47.26	100.45	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.59 L	11.99	48.97	0.0	0.00	0.00	0.00			
		-71.64 R	-55.11	100.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.66 L	9.74	12.79	0.0	0.00	0.00	0.00			
		-59.77 R	-45.98	100.49	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	12.98	1.45	11.76	1.65	HS 29.03	52.3
HS20	21.64	2.42	19.60	2.76	HS 48.39	87.1
2F1	33.63	6.11	30.46	6.95	0.00	91.6
3F1	23.44	3.74	21.23	4.26	0.00	86.0
4F1	21.78	3.21	19.73	3.65	0.00	86.6
5C1	26.81	3.85	24.28	4.38	0.00	153.8

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.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-9.1	9.1

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.9	63.9
OPER	151.3	-106.5	106.5

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	-33.80	33.80	-26.00	26.00	-26.03	26.03	-20.02	20.02
OPER	HS20	-33.80	33.80	-26.00	26.00	-26.03	26.03	-20.02	20.02
OPER	2F1	-19.29	19.29	-14.84	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-27.12	27.12	-20.86	20.86	0.00	0.00	0.00	0.00
OPER	4F1	-28.50	28.50	-21.93	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-25.57	25.57	-19.67	19.67	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.89	1.89	HS 37.81	68.1
HS20	3.15	3.15	HS 63.02	113.4
2F1	5.52	5.52	0.00	82.8
3F1	3.93	3.93	0.00	90.3
4F1	3.74	3.74	0.00	100.9
5C1	4.16	4.16	0.00	166.6

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. 5.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.9 -35.9

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. 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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	2F1	10.10 L	7.77	54.58	0.0	0.00	0.00	0.00	
		-37.64 L	-28.95	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.48 L	11.14	52.18	0.0	0.00	0.00	0.00	
		-61.44 R	-47.26	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.59 L	11.99	48.97	0.0	0.00	0.00	0.00	
		-71.64 R	-55.11	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.66 L	9.74	12.79	0.0	0.00	0.00	0.00	
		-59.77 R	-45.98	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.17	1.52	12.17	1.52	HS 30.39	54.7
HS20	20.28	2.53	20.28	2.53	HS 50.65	91.2
2F1	31.52	6.39	31.52	6.39	0.00	95.9
3F1	21.97	3.91	21.97	3.91	0.00	90.0
4F1	20.42	3.36	20.42	3.36	0.00	90.7

5C1 25.13 4.02 25.13 4.02 0.00 161.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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
-1.3	-16.3

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	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-283.0

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	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06			
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10		107.63	
OPER	HS20	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06			
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10		107.63	
OPER	2F1	12.91 R	9.93	108.06	0.0	0.00	0.00	0.00			
		-32.87 L	-25.28	78.49	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	12.65 L	9.73	52.18	0.0	0.00	0.00	0.00			
		-47.15 L	-36.27	76.10	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	13.45 L	10.34	48.18	0.0	0.00	0.00	0.00			
		-50.74 L	-39.03	72.88	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	26.85 L	20.66	51.06	0.0	0.00	0.00	0.00			
		-41.49 L	-31.92	71.71	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	7.86	2.76	7.07	3.11	HS 55.11	99.2
HS20	13.10	4.59	11.78	5.18	HS 91.84	165.3
2F1	24.65	7.64	22.18	8.61	0.00	114.6
3F1	25.16	5.32	22.63	6.00	0.00	122.5
4F1	23.67	4.95	21.29	5.58	0.00	133.6
5C1	11.85	6.05	10.66	6.82	0.00	242.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.6	65.1
OPER	151.3	-124.3	108.5

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	-2.85	29.42	-2.19	22.63	-3.18	23.51	-2.44	18.08
OPER	HS20	-2.85	29.42	-2.19	22.63	-3.18	23.51	-2.44	18.08
OPER	2F1	-2.00	17.32	-1.54	13.32	0.00	0.00	0.00	0.00
OPER	3F1	-2.87	23.91	-2.20	18.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	24.64	-2.36	18.95	0.00	0.00	0.00	0.00
OPER	5C1	-2.91	22.47	-2.24	17.29	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.46	2.21	HS 44.24	79.6
HS20	39.10	3.69	HS 73.73	132.7
2F1	62.21	6.26	0.00	93.9
3F1	43.36	4.54	0.00	104.3
4F1	40.56	4.40	0.00	118.9
5C1	42.76	4.83	0.00	193.1

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. 5.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -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. 157.1	160.6	-174.7	160.6	-174.7	178.2	-157.1	178.2	-
OPER 261.8	279.4	-279.4	279.4	-279.4	297.0	-261.8	297.0	-

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	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06	
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63
OPER	HS20	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06	
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63
OPER	2F1	12.91 R	9.93	108.06	0.0	0.00	0.00	0.00	
		-32.87 L	-25.28	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.65 L	9.73	52.18	0.0	0.00	0.00	0.00	
		-47.15 L	-36.27	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.45 L	10.34	48.18	0.0	0.00	0.00	0.00	
		-50.74 L	-39.03	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.85 L	20.66	51.06	0.0	0.00	0.00	0.00	
		-41.49 L	-31.92	71.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.34	2.87	7.34	2.87	HS 57.46	103.4
HS20	12.23	4.79	12.23	4.79	HS 95.77	172.4
2F1	23.01	7.97	23.01	7.97	0.00	119.5
3F1	23.48	5.55	23.48	5.55	0.00	127.7
4F1	22.09	5.16	22.09	5.16	0.00	139.3

5C1	11.06	6.31	11.06	6.31	0.00	252.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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 -1.0

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	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45		
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27	
OPER	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45		
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27	
OPER	2F1	36.51 R	28.09	110.45	0.0	0.00	0.00	0.00		
		-28.09 L	-21.61	78.49	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	44.08 R	33.91	114.45	0.0	0.00	0.00	0.00		
		-40.30 L	-31.00	76.10	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	40.37 R	31.05	118.45	0.0	0.00	0.00	0.00		
		-43.37 L	-33.36	72.88	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	52.79 L	40.61	53.45	0.0	0.00	0.00	0.00		
		-37.51 L	-28.86	74.10	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	3.21	3.84	2.87	4.30	HS 57.34	103.2
HS20	5.34	6.40	4.78	7.17	HS 95.57	172.0
2F1	8.26	9.52	7.39	10.66	0.00	110.8
3F1	6.84	6.64	6.12	7.43	0.00	140.7
4F1	7.47	6.17	6.68	6.91	0.00	166.6
5C1	5.72	7.13	5.11	7.99	0.00	204.4

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.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.4	0.0	5.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-73.4	66.3
OPER	151.3	-122.3	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	-2.85	24.77	-2.19	19.06	-4.41	20.74	-3.40	15.96
OPER	HS20	-2.85	24.77	-2.19	19.06	-4.41	20.74	-3.40	15.96
OPER	2F1	-2.00	15.10	-1.54	11.61	0.00	0.00	0.00	0.00
OPER	3F1	-2.87	20.42	-2.20	15.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	21.08	-2.36	16.21	0.00	0.00	0.00	0.00
OPER	5C1	-4.40	19.22	-3.38	14.79	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.62	2.67	HS 53.50	96.3
HS20	27.71	4.46	HS 89.17	160.5
2F1	61.22	7.32	0.00	109.7
3F1	42.67	5.41	0.00	124.4
4F1	39.92	5.24	0.00	141.5
5C1	27.81	5.75	0.00	229.8

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. 5.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -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. 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	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45	
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27
OPER	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45	
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27
OPER	2F1	36.51 R	28.09	110.45	0.0	0.00	0.00	0.00	
		-28.09 L	-21.61	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.08 R	33.91	114.45	0.0	0.00	0.00	0.00	
		-40.30 L	-31.00	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.37 R	31.05	118.45	0.0	0.00	0.00	0.00	
		-43.37 L	-33.36	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.79 L	40.61	53.45	0.0	0.00	0.00	0.00	
		-37.51 L	-28.86	74.10	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
HS20	4.97	6.66	4.97	6.66	HS 99.37	178.9
2F1	7.68	9.91	7.68	9.91	0.00	115.2
3F1	6.36	6.91	6.36	6.91	0.00	146.3
4F1	6.95	6.42	6.95	6.42	0.00	173.3

5C1

5.31

7.42

5.31

7.42

0.00

212.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
0.8 9.9

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	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.3	258.0	-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	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84			
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00		
OPER	HS20	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84			
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00		
OPER	2F1	53.62 R	41.25	112.84	0.0	0.00	0.00	0.00			
		-23.32 L	-17.94	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.52 R	51.93	116.84	0.0	0.00	0.00	0.00			
		-33.46 L	-25.74	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.67 R	52.82	116.84	0.0	0.00	0.00	0.00			
		-36.00 L	-27.69	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.62 L	54.32	55.84	0.0	0.00	0.00	0.00			
		-35.22 L	-27.10	74.88	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	2.14	4.83	1.90	5.39	HS 38.03	68.5
HS20	3.56	8.05	3.17	8.98	HS 63.38	114.1
2F1	5.41	11.98	4.81	13.35	0.00	72.2
3F1	4.30	8.35	3.82	9.31	0.00	87.9
4F1	4.22	7.76	3.76	8.65	0.00	101.4
5C1	4.11	7.93	3.65	8.84	0.00	146.1

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

3.6

Rat. Veh.	Shear Capacity VU	Available 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	-4.94	20.30	-3.80	15.62	-6.68	17.84	-5.14	13.72
OPER	HS20	-4.94	20.30	-3.80	15.62	-6.68	17.84	-5.14	13.72
OPER	2F1	-3.56	12.72	-2.74	9.78	0.00	0.00	0.00	0.00
OPER	3F1	-3.80	16.81	-2.93	12.93	0.00	0.00	0.00	0.00
OPER	4F1	-3.06	17.30	-2.36	13.31	0.00	0.00	0.00	0.00
OPER	5C1	-6.20	16.00	-4.77	12.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.81	3.32	HS 66.46	119.6
HS20	18.02	5.54	HS 110.77	199.4
2F1	33.77	8.84	0.00	132.6
3F1	31.63	6.69	0.00	153.9
4F1	39.27	6.50	0.00	175.5
5C1	19.42	7.03	0.00	281.1

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. 5.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
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	+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	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84	
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00
OPER	HS20	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84	
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00
OPER	2F1	53.62 R	41.25	112.84	0.0	0.00	0.00	0.00	
		-23.32 L	-17.94	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.52 R	51.93	116.84	0.0	0.00	0.00	0.00	
		-33.46 L	-25.74	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.67 R	52.82	116.84	0.0	0.00	0.00	0.00	
		-36.00 L	-27.69	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.62 L	54.32	55.84	0.0	0.00	0.00	0.00	
		-35.22 L	-27.10	74.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.61	71.3
HS20	3.30	8.36	3.30	8.36	HS 66.02	118.8
2F1	5.01	12.44	5.01	12.44	0.00	75.2
3F1	3.98	8.67	3.98	8.67	0.00	91.5
4F1	3.91	8.06	3.91	8.06	0.00	105.7

5C1 3.81 8.24 3.81 8.24 0.00 152.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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 1.3
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	169.7	-171.8	150.5	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	282.9	-286.4	250.9	-318.4

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	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23			
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00		
OPER	HS20	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23			
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00		
OPER	2F1	62.86 R	48.35	115.23	0.0	0.00	0.00	0.00			
		-18.55 L	-14.27	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.54 R	61.18	115.23	0.0	0.00	0.00	0.00			
		-26.61 L	-20.47	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	84.95 R	65.35	119.23	0.0	0.00	0.00	0.00			
		-28.64 L	-22.03	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.17 R	61.67	117.23	0.0	0.00	0.00	0.00			
		-33.50 L	-25.77	75.76	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	6.23	1.65	6.92	HS 33.10	59.6
HS20	3.11	10.38	2.76	11.54	HS 55.16	99.3
2F1	4.50	15.44	3.99	17.16	0.00	59.9
3F1	3.56	10.76	3.15	11.96	0.00	72.6
4F1	3.33	10.00	2.95	11.12	0.00	79.7
5C1	3.53	8.55	3.13	9.50	0.00	125.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.400

HS20 HS20

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	68.6
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	-9.37	16.91	-7.21	13.01	-9.23	14.88	-7.10	11.45
OPER	HS20	-9.37	16.91	-7.21	13.01	-9.23	14.88	-7.10	11.45
OPER	2F1	-5.61	10.28	-4.32	7.91	0.00	0.00	0.00	0.00
OPER	3F1	-6.62	13.21	-5.09	10.16	0.00	0.00	0.00	0.00
OPER	4F1	-5.61	13.31	-4.31	10.24	0.00	0.00	0.00	0.00
OPER	5C1	-8.27	13.30	-6.36	10.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.58	4.06	HS 81.17	146.1
HS20	12.63	6.76	HS 135.29	243.5
2F1	21.09	11.13	0.00	167.0
3F1	17.89	8.66	0.00	199.1
4F1	21.11	8.59	0.00	232.0
5C1	14.31	8.60	0.00	344.1

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.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.3	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. 178.3	174.7	-160.5	174.7	-160.5	157.0	-178.3	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

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	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23	
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00
OPER	HS20	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23	
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00
OPER	2F1	62.86 R	48.35	115.23	0.0	0.00	0.00	0.00	
		-18.55 L	-14.27	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.54 R	61.18	115.23	0.0	0.00	0.00	0.00	
		-26.61 L	-20.47	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	84.95 R	65.35	119.23	0.0	0.00	0.00	0.00	
		-28.64 L	-22.03	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.17 R	61.67	117.23	0.0	0.00	0.00	0.00	
		-33.50 L	-25.77	75.76	0.0	0.00	0.00	0.00	0.00

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	6.46	1.73	6.46	HS 34.51	62.1
HS20	2.88	10.77	2.88	10.77	HS 57.52	103.5
2F1	4.16	16.02	4.16	16.02	0.00	62.4
3F1	3.29	11.17	3.29	11.17	0.00	75.7
4F1	3.08	10.38	3.08	10.38	0.00	83.2

5C1	3.26	8.87	3.26	8.87	0.00	130.5
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.326

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.03		105.2

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	11.96	1.00	33000.	73.86	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.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.5	18.6

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	168.3	-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	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63			
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00		
OPER	HS20	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63			
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00		
OPER	2F1	63.81 R	49.09	117.63	0.0	0.00	0.00	0.00			
		-13.79 R	-10.61	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.54 L	65.03	97.63	0.0	0.00	0.00	0.00			
		-19.79 R	-15.22	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	87.81 L	67.55	93.63	0.0	0.00	0.00	0.00			
		-21.29 R	-16.38	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	82.99 R	63.84	158.63	0.0	0.00	0.00	0.00			
		-32.87 R	-25.28	137.88	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	1.92	8.12	1.70	9.02	HS 33.96	61.1
HS20	3.19	13.53	2.83	15.03	HS 56.60	101.9
2F1	4.40	20.93	3.90	23.25	0.00	58.4
3F1	3.32	14.59	2.94	16.21	0.00	67.6
4F1	3.19	13.56	2.83	15.06	0.00	76.4
5C1	3.38	8.78	2.99	9.76	0.00	119.8

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.	5.500		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.	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	-13.38	13.38	-10.29	10.29	-12.00	11.98	-9.23	9.21
OPER	HS20	-13.38	13.38	-10.29	10.29	-12.00	11.98	-9.23	9.21
OPER	2F1	-7.88	7.88	-6.06	6.06	0.00	0.00	0.00	0.00
OPER	3F1	-9.78	9.78	-7.52	7.52	0.00	0.00	0.00	0.00
OPER	4F1	-9.24	9.24	-7.10	7.11	0.00	0.00	0.00	0.00
OPER	5C1	-10.57	10.57	-8.13	8.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.22	HS 104.33	187.8
HS20	8.69	8.70	HS 173.89	313.0
2F1	14.77	14.77	0.00	221.6
3F1	11.90	11.90	0.00	273.6
4F1	12.60	12.60	0.00	340.1
5C1	11.01	11.01	0.00	440.4

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.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.5	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. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.5	279.4	-279.4	279.4	-279.4	259.3	-299.5	259.3	-

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	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63	
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00
OPER	HS20	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63	
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00
OPER	2F1	63.81 R	49.09	117.63	0.0	0.00	0.00	0.00	
		-13.79 R	-10.61	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.54 L	65.03	97.63	0.0	0.00	0.00	0.00	
		-19.79 R	-15.22	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	87.81 L	67.55	93.63	0.0	0.00	0.00	0.00	
		-21.29 R	-16.38	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	82.99 R	63.84	158.63	0.0	0.00	0.00	0.00	
		-32.87 R	-25.28	137.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	8.42	1.77	8.42	HS 35.43	63.8
HS20	2.95	14.04	2.95	14.04	HS 59.05	106.3
2F1	4.06	21.71	4.06	21.71	0.00	61.0
3F1	3.07	15.14	3.07	15.14	0.00	70.5
4F1	2.95	14.07	2.95	14.07	0.00	79.7

5C1 3.12 9.11 3.12 9.11 0.00 125.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	102.155

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
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	169.9	-171.7	150.7	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-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	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02			
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00		
OPER	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02			
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00		
OPER	2F1	62.86 L	48.36	100.02	0.0	0.00	0.00	0.00			
		-18.57 R	-14.28	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.55 L	61.19	100.02	0.0	0.00	0.00	0.00			
		-26.64 R	-20.49	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	84.96 L	65.35	96.02	0.0	0.00	0.00	0.00			
		-28.67 R	-22.05	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.21 L	61.70	98.02	0.0	0.00	0.00	0.00			
		-33.40 R	-25.69	138.76	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	6.22	1.66	6.91	HS 33.12	59.6
HS20	3.11	10.37	2.76	11.52	HS 55.21	99.4
2F1	4.50	15.41	3.99	17.13	0.00	59.9
3F1	3.56	10.74	3.16	11.94	0.00	72.6
4F1	3.33	9.98	2.96	11.10	0.00	79.8
5C1	3.53	8.57	3.13	9.52	0.00	125.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-1.9	0.0
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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	-16.91	9.37	-13.01	7.21	-14.91	9.20	-11.47	7.08
OPER	HS20	-16.91	9.37	-13.01	7.21	-14.91	9.20	-11.47	7.08
OPER	2F1	-10.28	5.61	-7.91	4.32	0.00	0.00	0.00	0.00
OPER	3F1	-13.21	6.62	-10.16	5.09	0.00	0.00	0.00	0.00
OPER	4F1	-13.31	5.61	-10.24	4.31	0.00	0.00	0.00	0.00
OPER	5C1	-13.30	8.27	-10.23	6.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.05	7.58	HS 81.10	146.0
HS20	6.76	12.64	HS 135.16	243.3
2F1	11.12	21.10	0.00	166.8
3F1	8.65	17.90	0.00	199.0
4F1	8.59	21.12	0.00	231.8
5C1	8.60	14.32	0.00	343.9

SERVICEABILITY 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 1.3
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. 178.1	174.6	-160.6	174.6	-160.6	157.1	-178.1	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

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	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02	
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00
OPER	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02	
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00
OPER	2F1	62.86 L	48.36	100.02	0.0	0.00	0.00	0.00	
		-18.57 R	-14.28	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.55 L	61.19	100.02	0.0	0.00	0.00	0.00	
		-26.64 R	-20.49	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	84.96 L	65.35	96.02	0.0	0.00	0.00	0.00	
		-28.67 R	-22.05	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.21 L	61.70	98.02	0.0	0.00	0.00	0.00	
		-33.40 R	-25.69	138.76	0.0	0.00	0.00	0.00	0.00

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	6.45	1.73	6.45	HS 34.54	62.2
HS20	2.88	10.76	2.88	10.76	HS 57.57	103.6
2F1	4.17	15.99	4.17	15.99	0.00	62.5
3F1	3.29	11.15	3.29	11.15	0.00	75.7
4F1	3.08	10.36	3.08	10.36	0.00	83.2

5C1	3.27	8.89	3.27	8.89	0.00	130.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	102.155

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 9.5

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.4	-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	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41			
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00		
OPER	HS20	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41			
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00		
OPER	2F1	53.63 L	41.25	102.41	0.0	0.00	0.00	0.00			
		-23.35 R	-17.96	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.52 L	51.94	98.41	0.0	0.00	0.00	0.00			
		-33.49 R	-25.76	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.68 L	52.83	98.41	0.0	0.00	0.00	0.00			
		-36.04 R	-27.72	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.71 R	54.39	159.41	0.0	0.00	0.00	0.00			
		-35.25 R	-27.12	140.37	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	2.14	4.82	1.90	5.37	HS 38.10	68.6
HS20	3.57	8.03	3.17	8.96	HS 63.49	114.3
2F1	5.42	11.94	4.82	13.31	0.00	72.3
3F1	4.30	8.33	3.83	9.28	0.00	88.0
4F1	4.23	7.74	3.76	8.62	0.00	101.6
5C1	4.11	7.91	3.65	8.82	0.00	146.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.700

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	-112.3	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	-20.30	4.94	-15.62	3.80	-17.86	6.65	-13.74	5.11
OPER	HS20	-20.30	4.94	-15.62	3.80	-17.86	6.65	-13.74	5.11
OPER	2F1	-12.72	3.56	-9.78	2.74	0.00	0.00	0.00	0.00
OPER	3F1	-16.81	3.80	-12.93	2.93	0.00	0.00	0.00	0.00
OPER	4F1	-17.30	3.06	-13.31	2.35	0.00	0.00	0.00	0.00
OPER	5C1	-16.00	6.20	-12.31	4.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.87	HS 66.40	119.5
HS20	5.53	18.11	HS 110.67	199.2
2F1	8.83	33.80	0.00	132.5
3F1	6.68	31.65	0.00	153.7
4F1	6.49	39.35	0.00	175.3
5C1	7.02	19.43	0.00	280.9

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 0.7
Superimposed Dead Load Moment 9.5

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. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	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 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	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41	
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00
OPER	HS20	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41	
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00
OPER	2F1	53.63 L	41.25	102.41	0.0	0.00	0.00	0.00	
		-23.35 R	-17.96	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.52 L	51.94	98.41	0.0	0.00	0.00	0.00	
		-33.49 R	-25.76	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.68 L	52.83	98.41	0.0	0.00	0.00	0.00	
		-36.04 R	-27.72	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.71 R	54.39	159.41	0.0	0.00	0.00	0.00	
		-35.25 R	-27.12	140.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.01	1.98	5.01	HS 39.68	71.4
HS20	3.31	8.34	3.31	8.34	HS 66.13	119.0
2F1	5.02	12.40	5.02	12.40	0.00	75.3
3F1	3.99	8.65	3.99	8.65	0.00	91.7
4F1	3.92	8.04	3.92	8.04	0.00	105.8

5C1 3.81 8.22 3.81 8.22 0.00 152.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	102.155

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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. 5.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.7

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	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	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80			
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98		
OPER	HS20	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80			
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98		
OPER	2F1	36.52 L	28.09	104.80	0.0	0.00	0.00	0.00	0.00		
		-28.12 R	-21.63	136.76	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	44.10 L	33.92	100.80	0.0	0.00	0.00	0.00	0.00		
		-40.35 R	-31.04	139.15	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	40.38 L	31.07	96.80	0.0	0.00	0.00	0.00	0.00		
		-43.42 R	-33.40	142.37	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	52.93 R	40.71	161.80	0.0	0.00	0.00	0.00	0.00		
		-37.55 R	-28.89	141.15	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	3.21	3.83	2.87	4.29	HS 57.48	103.5
HS20	5.36	6.38	4.79	7.15	HS 95.80	172.4
2F1	8.28	9.49	7.41	10.62	0.00	111.1
3F1	6.86	6.61	6.13	7.41	0.00	141.1
4F1	7.49	6.15	6.70	6.88	0.00	165.9
5C1	5.72	7.11	5.11	7.96	0.00	204.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

5.800

HS20 HS20

2F1

3F1

4F1

5C1

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

-0.5 -5.6 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.4
OPER	151.3	-110.4	122.4

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	-24.77	2.85	-19.06	2.19	-20.77	4.38	-15.98	3.37
OPER	HS20	-24.77	2.85	-19.06	2.19	-20.77	4.38	-15.98	3.37
OPER	2F1	-15.10	2.00	-11.61	1.53	0.00	0.00	0.00	0.00
OPER	3F1	-20.42	2.86	-15.71	2.20	0.00	0.00	0.00	0.00
OPER	4F1	-21.07	3.06	-16.21	2.35	0.00	0.00	0.00	0.00
OPER	5C1	-19.22	4.40	-14.78	3.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	16.75	HS 53.45	96.2
HS20	4.45	27.91	HS 89.09	160.4
2F1	7.31	61.34	0.00	109.6
3F1	5.40	42.76	0.00	124.3
4F1	5.24	39.99	0.00	141.4
5C1	5.74	27.85	0.00	229.7

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. 5.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.7

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. 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	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80	
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98
OPER	HS20	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80	
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98
OPER	2F1	36.52 L	28.09	104.80	0.0	0.00	0.00	0.00	
		-28.12 R	-21.63	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.10 L	33.92	100.80	0.0	0.00	0.00	0.00	
		-40.35 R	-31.04	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.38 L	31.07	96.80	0.0	0.00	0.00	0.00	
		-43.42 R	-33.40	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.93 R	40.71	161.80	0.0	0.00	0.00	0.00	
		-37.55 R	-28.89	141.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.76	107.6
HS20	4.98	6.64	4.98	6.64	HS 99.61	179.3
2F1	7.70	9.87	7.70	9.87	0.00	115.5
3F1	6.38	6.88	6.38	6.88	0.00	146.7
4F1	6.96	6.39	6.96	6.39	0.00	172.6

5C1

5.31

7.39

5.31

7.39

0.00

212.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	102.155

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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 -1.4
Superimposed Dead Load Moment -17.2

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	191.5	-150.0	172.3	-169.2
OPER	300.6C	-268.7	268.7	-300.6C	319.2	-250.1	287.2	-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	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19			
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63		
OPER	HS20	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19			
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63		
OPER	2F1	12.92 L	9.94	107.19	0.0	0.00	0.00	0.00			
		-32.90 R	-25.31	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.84 R	9.88	163.07	0.0	0.00	0.00	0.00			
		-47.20 R	-36.31	139.15	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	13.65 R	10.50	167.07	0.0	0.00	0.00	0.00			
		-50.79 R	-39.07	142.37	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	27.03 R	20.79	164.19	0.0	0.00	0.00	0.00			
		-41.54 R	-31.95	143.54	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	8.11	2.74	7.30	3.09	HS 54.83	98.7
HS20	13.52	4.57	12.16	5.15	HS 91.38	164.5
2F1	24.71	7.60	22.24	8.57	0.00	114.0
3F1	24.86	5.30	22.37	5.97	0.00	121.9
4F1	23.39	4.92	21.05	5.55	0.00	132.9
5C1	11.81	6.02	10.63	6.79	0.00	240.8

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	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.6
OPER	151.3	-108.4	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	-29.42	2.97	-22.63	2.28	-23.54	3.15	-18.10	2.42
OPER	HS20	-29.42	2.97	-22.63	2.28	-23.54	3.15	-18.10	2.42
OPER	2F1	-17.32	2.00	-13.32	1.53	0.00	0.00	0.00	0.00
OPER	3F1	-23.91	2.86	-18.39	2.20	0.00	0.00	0.00	0.00
OPER	4F1	-24.63	3.08	-18.95	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-22.46	2.90	-17.28	2.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.72	HS 44.20	79.6
HS20	3.68	39.53	HS 73.67	132.6
2F1	6.26	62.33	0.00	93.9
3F1	4.53	43.45	0.00	104.3
4F1	4.40	40.38	0.00	118.8
5C1	4.82	42.83	0.00	193.0

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. 5.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.4 -17.2

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. 156.5	160.2	-175.1	160.2	-175.1	178.8	-156.5	178.8	-
OPER 260.8	279.4	-279.4	279.4	-279.4	298.0	-260.8	298.0	-

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	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19	
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63
OPER	HS20	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19	
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63
OPER	2F1	12.92 L	9.94	107.19	0.0	0.00	0.00	0.00	
		-32.90 R	-25.31	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.84 R	9.88	163.07	0.0	0.00	0.00	0.00	
		-47.20 R	-36.31	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.65 R	10.50	167.07	0.0	0.00	0.00	0.00	
		-50.79 R	-39.07	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	27.03 R	20.79	164.19	0.0	0.00	0.00	0.00	
		-41.54 R	-31.95	143.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.57	2.86	7.57	2.86	HS 57.19	102.9
HS20	12.62	4.77	12.62	4.77	HS 95.31	171.6
2F1	23.07	7.93	23.07	7.93	0.00	118.9
3F1	23.21	5.53	23.21	5.53	0.00	127.1
4F1	21.83	5.14	21.83	5.14	0.00	138.6

5C1	11.02	6.28	11.02	6.28	0.00	251.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	102.155

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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
-3.0	-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	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	2F1	10.25 R	7.89	160.68	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.70 R	11.31	163.07	0.0	0.00	0.00	0.00	
		-61.43 R	-47.26	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.82 R	12.17	166.28	0.0	0.00	0.00	0.00	
		-71.69 L	-55.15	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.09 R	9.30	204.07	0.0	0.00	0.00	0.00	
		-59.75 R	-45.96	124.37	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	13.24	1.44	12.00	1.65	HS 28.88	52.0
HS20	22.07	2.41	20.00	2.74	HS 48.13	86.6
2F1	33.24	6.07	30.12	6.91	0.00	91.0
3F1	23.17	3.72	21.00	4.24	0.00	85.6
4F1	21.54	3.19	19.52	3.63	0.00	86.1
5C1	28.17	3.83	25.53	4.36	0.00	153.0

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.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.8	63.8
OPER	151.3	-106.4	106.3

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	-29.42	33.81	-22.63	26.01	-23.54	26.09	-18.10	20.07
OPER	HS20	-29.42	33.81	-22.63	26.01	-23.54	26.09	-18.10	20.07
OPER	2F1	-17.32	19.29	-13.32	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-23.91	27.13	-18.39	20.87	0.00	0.00	0.00	0.00
OPER	4F1	-24.63	28.51	-18.95	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-22.46	25.58	-17.28	19.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
HS20	3.15	3.14	HS 62.88	113.2
2F1	5.52	5.51	0.00	82.6
3F1	3.92	3.92	0.00	90.1
4F1	3.73	3.73	0.00	100.6
5C1	4.16	4.16	0.00	166.2

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. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.0 -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	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	2F1	10.25 R	7.89	160.68	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.70 R	11.31	163.07	0.0	0.00	0.00	0.00	
		-61.43 R	-47.26	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.82 R	12.17	166.28	0.0	0.00	0.00	0.00	
		-71.69 L	-55.15	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.09 R	9.30	204.07	0.0	0.00	0.00	0.00	
		-59.75 R	-45.96	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
HS20	20.69	2.52	20.69	2.52	HS 50.39	90.7
2F1	31.17	6.35	31.17	6.35	0.00	95.3
3F1	21.73	3.90	21.73	3.90	0.00	89.6
4F1	20.20	3.34	20.20	3.34	0.00	90.1

5C1	26.42	4.01	26.42	4.01	0.00	160.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-3.0 -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	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02		
OPER	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02		
OPER	2F1	10.25 R	7.89	160.68	0.0	0.00	0.00	0.00			
		-37.68 R	-28.98	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.70 R	11.31	163.07	0.0	0.00	0.00	0.00			
		-61.43 R	-47.26	124.37	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	15.82 R	12.17	166.28	0.0	0.00	0.00	0.00			
		-71.69 L	-55.15	114.37	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	12.09 R	9.30	204.07	0.0	0.00	0.00	0.00			
		-59.75 R	-45.96	124.37	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	13.24	1.44	12.00	1.65	HS 28.88	52.0
HS20	22.07	2.41	20.00	2.74	HS 48.13	86.6
2F1	33.24	6.07	30.12	6.91	0.00	91.0
3F1	23.17	3.72	21.00	4.24	0.00	85.6
4F1	21.54	3.19	19.52	3.63	0.00	86.1
5C1	28.17	3.83	25.53	4.36	0.00	153.0

SHEAR 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

Superimposed Dead Load

(-) Shear (+) Shear

(-) Shear (+) Shear

-0.7

0.8

-9.2

9.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.8	63.8
OPER	151.3	-106.4	106.3

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	-33.80	33.81	-26.00	26.01	-26.06	26.09	-20.04	20.07
OPER	HS20	-33.80	33.81	-26.00	26.01	-26.06	26.09	-20.04	20.07
OPER	2F1	-19.29	19.29	-14.84	14.84	0.00	0.00	0.00	0.00
OPER	3F1	-27.12	27.13	-20.86	20.87	0.00	0.00	0.00	0.00
OPER	4F1	-28.50	28.51	-21.93	21.93	0.00	0.00	0.00	0.00
OPER	5C1	-25.56	25.58	-19.66	19.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
HS20	3.15	3.14	HS 62.88	113.2
2F1	5.52	5.51	0.00	82.6
3F1	3.92	3.92	0.00	90.1
4F1	3.73	3.73	0.00	100.6
5C1	4.16	4.16	0.00	166.2

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. 6.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	2F1	10.25 R	7.89	160.68	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.70 R	11.31	163.07	0.0	0.00	0.00	0.00	
		-61.43 R	-47.26	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.82 R	12.17	166.28	0.0	0.00	0.00	0.00	
		-71.69 L	-55.15	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.09 R	9.30	204.07	0.0	0.00	0.00	0.00	
		-59.75 R	-45.96	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
HS20	20.69	2.52	20.69	2.52	HS 50.39	90.7
2F1	31.17	6.35	31.17	6.35	0.00	95.3
3F1	21.73	3.90	21.73	3.90	0.00	89.6
4F1	20.20	3.34	20.20	3.34	0.00	90.1

5C1	26.42	4.01	26.42	4.01	0.00	160.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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
-1.4 -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	191.4	-150.2	172.2	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	319.0	-250.3	287.0	-282.3

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	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98			
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54		
OPER	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98			
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54		
OPER	2F1	12.89 R	9.92	131.98	0.0	0.00	0.00	0.00			
		-32.86 L	-25.27	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	12.63 L	9.72	76.10	0.0	0.00	0.00	0.00			
		-47.14 L	-36.26	100.02	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	13.43 L	10.33	72.10	0.0	0.00	0.00	0.00			
		-50.72 L	-39.02	96.80	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	26.83 L	20.64	74.98	0.0	0.00	0.00	0.00			
		-41.47 L	-31.90	95.63	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	7.95	2.75	7.15	3.10	HS 54.95	98.9
HS20	13.25	4.58	11.92	5.16	HS 91.59	164.9
2F1	24.74	7.62	22.26	8.59	0.00	114.3
3F1	25.25	5.31	22.72	5.99	0.00	122.1
4F1	23.75	4.93	21.37	5.57	0.00	133.2
5C1	11.89	6.04	10.70	6.81	0.00	241.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.6	0.0	7.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.7	65.0
OPER	151.3	-124.5	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	-2.86	29.44	-2.20	22.64	-3.15	23.57	-2.42	18.13
OPER	HS20	-2.86	29.44	-2.20	22.64	-3.15	23.57	-2.42	18.13
OPER	2F1	-2.03	17.33	-1.56	13.33	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	23.92	-2.24	18.40	0.00	0.00	0.00	0.00
OPER	4F1	-3.11	24.65	-2.39	18.96	0.00	0.00	0.00	0.00
OPER	5C1	-2.94	22.48	-2.26	17.29	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.73	2.21	HS 44.14	79.4
HS20	39.55	3.68	HS 73.56	132.4
2F1	61.37	6.25	0.00	93.7
3F1	42.79	4.53	0.00	104.1
4F1	40.04	4.39	0.00	118.6
5C1	42.32	4.82	0.00	192.6

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.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-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. 156.6	160.3	-175.0	160.3	-175.0	178.6	-156.6	178.6	-
OPER 261.1	279.4	-279.4	279.4	-279.4	297.7	-261.1	297.7	-

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	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98	
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54
OPER	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98	
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54
OPER	2F1	12.89 R	9.92	131.98	0.0	0.00	0.00	0.00	
		-32.86 L	-25.27	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.63 L	9.72	76.10	0.0	0.00	0.00	0.00	
		-47.14 L	-36.26	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.43 L	10.33	72.10	0.0	0.00	0.00	0.00	
		-50.72 L	-39.02	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.83 L	20.64	74.98	0.0	0.00	0.00	0.00	
		-41.47 L	-31.90	95.63	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.42	2.87	7.42	2.87	HS 57.31	103.2
HS20	12.37	4.78	12.37	4.78	HS 95.52	171.9
2F1	23.09	7.95	23.09	7.95	0.00	119.2
3F1	23.57	5.54	23.57	5.54	0.00	127.4
4F1	22.17	5.15	22.17	5.15	0.00	139.0

5C1	11.10	6.30	11.10	6.30	0.00	251.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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 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	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37			
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18		
OPER	HS20	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37			
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18		
OPER	2F1	36.51 R	28.09	134.37	0.0	0.00	0.00	0.00			
		-28.09 L	-21.61	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	44.08 R	33.91	138.37	0.0	0.00	0.00	0.00			
		-40.30 L	-31.00	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	40.37 R	31.05	142.37	0.0	0.00	0.00	0.00			
		-43.37 L	-33.36	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	52.78 L	40.60	77.37	0.0	0.00	0.00	0.00			
		-37.51 L	-28.85	98.02	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	3.21	3.84	2.87	4.30	HS 57.39	103.3
HS20	5.35	6.40	4.78	7.16	HS 95.66	172.2
2F1	8.27	9.52	7.39	10.65	0.00	110.9
3F1	6.85	6.63	6.12	7.43	0.00	140.9
4F1	7.48	6.16	6.69	6.90	0.00	166.4
5C1	5.72	7.13	5.11	7.98	0.00	204.6

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
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0.5	0.0	5.7
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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	-2.86	24.79	-2.20	19.07	-4.35	20.80	-3.35	16.00
OPER	HS20	-2.86	24.79	-2.20	19.07	-4.35	20.80	-3.35	16.00
OPER	2F1	-2.03	15.11	-1.56	11.62	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.43	-2.24	15.72	0.00	0.00	0.00	0.00
OPER	4F1	-3.11	21.09	-2.39	16.22	0.00	0.00	0.00	0.00
OPER	5C1	-4.42	19.23	-3.40	14.80	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.90	2.67	HS 53.37	96.1
HS20	28.16	4.45	HS 88.95	160.1
2F1	60.39	7.30	0.00	109.5
3F1	42.11	5.39	0.00	124.1
4F1	39.40	5.23	0.00	141.2
5C1	27.72	5.73	0.00	229.3

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. 6.200 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	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37	
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18
OPER	HS20	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37	
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18
OPER	2F1	36.51 R	28.09	134.37	0.0	0.00	0.00	0.00	
		-28.09 L	-21.61	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.08 R	33.91	138.37	0.0	0.00	0.00	0.00	
		-40.30 L	-31.00	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.37 R	31.05	142.37	0.0	0.00	0.00	0.00	
		-43.37 L	-33.36	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.78 L	40.60	77.37	0.0	0.00	0.00	0.00	
		-37.51 L	-28.85	98.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.68	107.4
HS20	4.97	6.66	4.97	6.66	HS 99.46	179.0
2F1	7.69	9.90	7.69	9.90	0.00	115.3
3F1	6.37	6.90	6.37	6.90	0.00	146.5
4F1	6.95	6.41	6.95	6.41	0.00	173.1

5C1

5.32

7.41

5.32

7.41

0.00

212.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.8	10.1

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	173.8	-167.8	154.6	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.6	257.7	-311.6

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	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76			
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00		
OPER	HS20	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76			
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00		
OPER	2F1	53.64 R	41.26	136.76	0.0	0.00	0.00	0.00			
		-23.33 L	-17.94	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.54 R	51.95	140.76	0.0	0.00	0.00	0.00			
		-33.46 L	-25.74	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.69 R	52.84	140.76	0.0	0.00	0.00	0.00			
		-36.01 L	-27.70	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.64 L	54.34	79.76	0.0	0.00	0.00	0.00			
		-35.27 L	-27.13	98.80	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	2.13	4.84	1.90	5.39	HS 37.99	68.4
HS20	3.56	8.06	3.17	8.98	HS 63.32	114.0
2F1	5.40	11.99	4.80	13.36	0.00	72.1
3F1	4.29	8.35	3.82	9.31	0.00	87.8
4F1	4.22	7.76	3.75	8.65	0.00	101.3
5C1	4.10	7.93	3.65	8.84	0.00	145.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.300

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	-4.94	20.31	-3.80	15.62	-6.61	17.90	-5.08	13.77
OPER	HS20	-4.94	20.31	-3.80	15.62	-6.61	17.90	-5.08	13.77
OPER	2F1	-3.56	12.73	-2.74	9.79	0.00	0.00	0.00	0.00
OPER	3F1	-3.80	16.82	-2.92	12.94	0.00	0.00	0.00	0.00
OPER	4F1	-3.11	17.31	-2.39	13.32	0.00	0.00	0.00	0.00
OPER	5C1	-6.20	16.00	-4.77	12.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.94	3.32	HS 66.32	119.4
HS20	18.23	5.53	HS 110.54	199.0
2F1	33.87	8.82	0.00	132.3
3F1	31.72	6.67	0.00	153.5
4F1	38.76	6.48	0.00	175.0
5C1	19.43	7.01	0.00	280.5

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. 6.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.1

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. 174.2	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	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76	
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00
OPER	HS20	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76	
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00
OPER	2F1	53.64 R	41.26	136.76	0.0	0.00	0.00	0.00	
		-23.33 L	-17.94	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.54 R	51.95	140.76	0.0	0.00	0.00	0.00	
		-33.46 L	-25.74	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.69 R	52.84	140.76	0.0	0.00	0.00	0.00	
		-36.01 L	-27.70	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.64 L	54.34	79.76	0.0	0.00	0.00	0.00	
		-35.27 L	-27.13	98.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.57	71.2
HS20	3.30	8.37	3.30	8.37	HS 65.96	118.7
2F1	5.01	12.45	5.01	12.45	0.00	75.1
3F1	3.97	8.68	3.97	8.68	0.00	91.4
4F1	3.91	8.06	3.91	8.06	0.00	105.5

5C1 3.80 8.23 3.80 8.23 0.00 152.0

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

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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	17.1

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	169.3	-172.3	150.1	-191.5
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	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15			
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00		
OPER	HS20	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15			
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00		
OPER	2F1	62.90 R	48.38	139.15	0.0	0.00	0.00	0.00			
		-18.56 L	-14.28	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.59 R	61.22	139.15	0.0	0.00	0.00	0.00			
		-26.63 L	-20.48	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	85.01 R	65.39	143.15	0.0	0.00	0.00	0.00			
		-28.65 L	-22.04	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.22 R	61.71	141.15	0.0	0.00	0.00	0.00			
		-33.50 L	-25.77	100.41	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	1.86	6.24	1.65	6.94	HS 33.00	59.4
HS20	3.10	10.40	2.75	11.56	HS 55.00	99.0
2F1	4.49	15.47	3.98	17.19	0.00	59.7
3F1	3.55	10.78	3.14	11.98	0.00	72.3
4F1	3.32	10.02	2.94	11.14	0.00	79.5
5C1	3.52	8.57	3.12	9.52	0.00	124.7

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	68.5
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	-9.37	16.92	-7.21	13.02	-9.16	14.95	-7.05	11.50
OPER	HS20	-9.37	16.92	-7.21	13.02	-9.16	14.95	-7.05	11.50
OPER	2F1	-5.60	10.29	-4.31	7.91	0.00	0.00	0.00	0.00
OPER	3F1	-6.61	13.23	-5.08	10.17	0.00	0.00	0.00	0.00
OPER	4F1	-5.60	13.33	-4.31	10.25	0.00	0.00	0.00	0.00
OPER	5C1	-8.25	13.30	-6.35	10.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.59	4.05	HS 81.00	145.8
HS20	12.65	6.75	HS 134.99	243.0
2F1	21.15	11.10	0.00	166.5
3F1	17.94	8.64	0.00	198.6
4F1	21.17	8.57	0.00	231.4
5C1	14.36	8.59	0.00	343.5

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. 6.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

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. 178.7	175.0	-160.2	175.0	-160.2	156.6	-178.7	156.6	-
OPER 297.9	279.4	-279.4	279.4	-279.4	260.9	-297.9	260.9	-

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	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15	
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00
OPER	HS20	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15	
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00
OPER	2F1	62.90 R	48.38	139.15	0.0	0.00	0.00	0.00	
		-18.56 L	-14.28	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.59 R	61.22	139.15	0.0	0.00	0.00	0.00	
		-26.63 L	-20.48	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.01 R	65.39	143.15	0.0	0.00	0.00	0.00	
		-28.65 L	-22.04	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.22 R	61.71	141.15	0.0	0.00	0.00	0.00	
		-33.50 L	-25.77	100.41	0.0	0.00	0.00	0.00	0.00

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	6.47	1.72	6.47	HS 34.42	62.0
HS20	2.87	10.79	2.87	10.79	HS 57.36	103.3
2F1	4.15	16.05	4.15	16.05	0.00	62.2
3F1	3.28	11.19	3.28	11.19	0.00	75.4
4F1	3.07	10.40	3.07	10.40	0.00	82.9

5C1 3.25 8.89 3.25 8.89 0.00 130.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	102.047

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.85		104.7

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	11.96	1.00	33000.	73.86	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	19.7

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	167.6	-174.0	148.4	-193.2
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	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54			
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07		0.00	
OPER	HS20	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54			
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07		0.00	
OPER	2F1	63.87 R	49.13	141.54	0.0	0.00	0.00	0.00			
		-14.00 R	-10.77	160.68	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	84.63 L	65.10	121.54	0.0	0.00	0.00	0.00			
		-20.08 R	-15.45	163.07	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	87.91 L	67.62	117.54	0.0	0.00	0.00	0.00			
		-21.60 R	-16.62	166.28	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	83.64 R	64.34	182.54	0.0	0.00	0.00	0.00			
		-33.11 R	-25.47	162.68	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	1.91	8.23	1.69	9.14	HS 33.77	60.8
HS20	3.18	13.72	2.82	15.24	HS 56.29	101.3
2F1	4.37	20.70	3.87	22.99	0.00	58.1
3F1	3.30	14.44	2.92	16.03	0.00	67.2
4F1	3.18	13.42	2.81	14.90	0.00	76.0
5C1	3.34	8.76	2.96	9.72	0.00	118.3

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

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	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	-13.39	13.39	-10.30	10.30	-11.93	12.04	-9.18	9.26
OPER	HS20	-13.39	13.39	-10.30	10.30	-11.93	12.04	-9.18	9.26
OPER	2F1	-7.87	7.89	-6.05	6.07	0.00	0.00	0.00	0.00
OPER	3F1	-9.77	9.79	-7.52	7.53	0.00	0.00	0.00	0.00
OPER	4F1	-9.22	9.25	-7.10	7.12	0.00	0.00	0.00	0.00
OPER	5C1	-10.52	10.60	-8.10	8.15	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.20	HS 104.11	187.4
HS20	8.70	8.68	HS 173.52	312.3
2F1	14.81	14.73	0.00	221.0
3F1	11.93	11.86	0.00	272.9
4F1	12.64	12.56	0.00	339.0
5C1	11.08	10.96	0.00	438.6

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.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	19.7

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. 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 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	87.89 R	67.61	145.54	0.0	78.07	131.54	
		-20.67 R	-15.90	176.28	0.0	-21.13	153.07	0.00
OPER	HS20	87.89 R	67.61	145.54	0.0	78.07	131.54	
		-20.67 R	-15.90	176.28	0.0	-21.13	153.07	0.00
OPER	2F1	63.87 R	49.13	141.54	0.0	0.00	0.00	0.00
		-14.00 R	-10.77	160.68	0.0	0.00	0.00	0.00
OPER	3F1	84.63 L	65.10	121.54	0.0	0.00	0.00	0.00
		-20.08 R	-15.45	163.07	0.0	0.00	0.00	0.00
OPER	4F1	87.91 L	67.62	117.54	0.0	0.00	0.00	0.00
		-21.60 R	-16.62	166.28	0.0	0.00	0.00	0.00
OPER	5C1	83.64 R	64.34	182.54	0.0	0.00	0.00	0.00
		-33.11 R	-25.47	162.68	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	1.76	8.54	1.76	8.54	HS 35.24	63.4
HS20	2.94	14.23	2.94	14.23	HS 58.74	105.7
2F1	4.04	21.47	4.04	21.47	0.00	60.6
3F1	3.05	14.97	3.05	14.97	0.00	70.1
4F1	2.94	13.92	2.94	13.92	0.00	79.3

5C1 3.09 9.08 3.09 9.08 0.00 123.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 17.8

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	168.9	-172.7	149.7	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.8

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	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93			
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00		
OPER	HS20	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93			
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00		
OPER	2F1	62.95 L	48.42	123.93	0.0	0.00	0.00	0.00			
		-18.85 R	-14.50	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.67 L	61.29	123.93	0.0	0.00	0.00	0.00			
		-27.04 R	-20.80	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	85.09 L	65.46	119.93	0.0	0.00	0.00	0.00			
		-29.09 R	-22.38	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.81 L	62.16	121.93	0.0	0.00	0.00	0.00			
		-33.75 R	-25.96	162.68	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	1.85	6.21	1.64	6.90	HS 32.86	59.1
HS20	3.09	10.34	2.74	11.49	HS 54.77	98.6
2F1	4.47	15.27	3.96	16.96	0.00	59.4
3F1	3.53	10.65	3.13	11.83	0.00	72.0
4F1	3.31	9.90	2.93	11.00	0.00	79.2
5C1	3.48	8.53	3.09	9.48	0.00	123.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

6.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.1	-1.7	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.5	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	-16.93	9.38	-13.02	7.22	-14.84	9.27	-11.41	7.13
OPER	HS20	-16.93	9.38	-13.02	7.22	-14.84	9.27	-11.41	7.13
OPER	2F1	-10.27	5.62	-7.90	4.32	0.00	0.00	0.00	0.00
OPER	3F1	-13.20	6.62	-10.15	5.09	0.00	0.00	0.00	0.00
OPER	4F1	-13.30	5.61	-10.23	4.31	0.00	0.00	0.00	0.00
OPER	5C1	-13.29	8.28	-10.22	6.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.06	7.56	HS 81.18	146.1
HS20	6.76	12.60	HS 135.29	243.5
2F1	11.15	21.04	0.00	167.3
3F1	8.68	17.85	0.00	199.5
4F1	8.61	21.09	0.00	232.5
5C1	8.62	14.28	0.00	344.7

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. 6.600 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	-
INV. 179.2	175.3	-160.0	175.3	-160.0	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	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93	
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00
OPER	HS20	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93	
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00
OPER	2F1	62.95 L	48.42	123.93	0.0	0.00	0.00	0.00	
		-18.85 R	-14.50	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.67 L	61.29	123.93	0.0	0.00	0.00	0.00	
		-27.04 R	-20.80	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.09 L	65.46	119.93	0.0	0.00	0.00	0.00	
		-29.09 R	-22.38	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.81 L	62.16	121.93	0.0	0.00	0.00	0.00	
		-33.75 R	-25.96	162.68	0.0	0.00	0.00	0.00	0.00

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	6.44	1.71	6.44	HS 34.28	61.7
HS20	2.86	10.73	2.86	10.73	HS 57.13	102.8
2F1	4.13	15.84	4.13	15.84	0.00	62.0
3F1	3.27	11.04	3.27	11.04	0.00	75.1
4F1	3.06	10.27	3.06	10.27	0.00	82.6

5C1	3.22	8.85	3.22	8.85	0.00	128.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.5

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	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.0	256.3	-313.0

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	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33			
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00		
OPER	HS20	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33			
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00		
OPER	2F1	53.74 L	41.34	126.33	0.0	0.00	0.00	0.00			
		-23.70 R	-18.23	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.68 L	52.06	122.33	0.0	0.00	0.00	0.00			
		-34.00 R	-26.15	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	68.84 L	52.96	122.33	0.0	0.00	0.00	0.00			
		-36.57 R	-28.13	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	71.91 R	55.32	183.33	0.0	0.00	0.00	0.00			
		-35.72 R	-27.48	164.28	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	2.12	4.82	1.88	5.37	HS 37.70	67.9
HS20	3.53	8.03	3.14	8.95	HS 62.83	113.1
2F1	5.36	11.86	4.77	13.21	0.00	71.5
3F1	4.26	8.27	3.79	9.21	0.00	87.1
4F1	4.19	7.68	3.72	8.56	0.00	100.5
5C1	4.01	7.87	3.56	8.76	0.00	142.5

SHEAR 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 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	-20.31	4.96	-15.63	3.81	-17.79	6.71	-13.69	5.16
OPER	HS20	-20.31	4.96	-15.63	3.81	-17.79	6.71	-13.69	5.16
OPER	2F1	-12.71	3.57	-9.78	2.74	0.00	0.00	0.00	0.00
OPER	3F1	-16.79	3.80	-12.92	2.93	0.00	0.00	0.00	0.00
OPER	4F1	-17.29	3.06	-13.30	2.35	0.00	0.00	0.00	0.00
OPER	5C1	-15.99	6.20	-12.30	4.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.74	HS 66.47	119.7
HS20	5.54	17.91	HS 110.79	199.4
2F1	8.86	33.70	0.00	132.8
3F1	6.70	31.59	0.00	154.1
4F1	6.51	39.34	0.00	175.8
5C1	7.04	19.37	0.00	281.5

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 11.5

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. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

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	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33	
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00
OPER	HS20	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33	
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00
OPER	2F1	53.74 L	41.34	126.33	0.0	0.00	0.00	0.00	
		-23.70 R	-18.23	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.68 L	52.06	122.33	0.0	0.00	0.00	0.00	
		-34.00 R	-26.15	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	68.84 L	52.96	122.33	0.0	0.00	0.00	0.00	
		-36.57 R	-28.13	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	71.91 R	55.32	183.33	0.0	0.00	0.00	0.00	
		-35.72 R	-27.48	164.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.96	5.00	1.96	5.00	HS 39.28	70.7
HS20	3.27	8.34	3.27	8.34	HS 65.47	117.8
2F1	4.97	12.31	4.97	12.31	0.00	74.5
3F1	3.94	8.58	3.94	8.58	0.00	90.7
4F1	3.88	7.98	3.88	7.98	0.00	104.7

5C1	3.71	8.17	3.71	8.17	0.00	148.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 0.0
Superimposed Dead Load Moment 0.8

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	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	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72			
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98		
OPER	HS20	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72			
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98		
OPER	2F1	36.65 L	28.19	128.72	0.0	0.00	0.00	0.00			
		-28.56 R	-21.97	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	44.29 L	34.07	124.72	0.0	0.00	0.00	0.00			
		-40.96 R	-31.51	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	40.59 L	31.22	120.72	0.0	0.00	0.00	0.00			
		-44.06 R	-33.89	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.76 R	42.12	185.72	0.0	0.00	0.00	0.00			
		-38.13 R	-29.33	165.07	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	3.17	3.84	2.84	4.29	HS 56.71	102.1
HS20	5.29	6.39	4.73	7.15	HS 94.52	170.1
2F1	8.18	9.44	7.31	10.56	0.00	109.6
3F1	6.77	6.58	6.05	7.36	0.00	139.1
4F1	7.39	6.12	6.60	6.84	0.00	165.2
5C1	5.47	7.07	4.89	7.91	0.00	195.6

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.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.4	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-66.3 73.3
OPER	151.3	-110.6 122.2

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	-24.77 2.84	-19.05 2.19		-20.70 4.45	-15.92 3.42			
OPER	HS20	-24.77 2.84	-19.05 2.19		-20.70 4.45	-15.92 3.42			
OPER	2F1	-15.09 1.99	-11.61 1.53		0.00 0.00	0.00 0.00			
OPER	3F1	-20.41 2.86	-15.70 2.20		0.00 0.00	0.00 0.00			
OPER	4F1	-21.07 3.06	-16.21 2.35		0.00 0.00	0.00 0.00			
OPER	5C1	-19.14 4.40	-14.72 3.38		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.68	16.49	HS 53.57	96.4
HS20	4.46	27.48	HS 89.28	160.7
2F1	7.33	61.32	0.00	109.9
3F1	5.42	42.74	0.00	124.6
4F1	5.25	39.98	0.00	141.7
5C1	5.78	27.78	0.00	231.0

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. 6.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.8

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. 168.1	168.0	-167.3	168.0	-167.3	167.1	-168.1	167.1	-
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 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	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72	
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98
OPER	HS20	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72	
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98
OPER	2F1	36.65 L	28.19	128.72	0.0	0.00	0.00	0.00	
		-28.56 R	-21.97	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.29 L	34.07	124.72	0.0	0.00	0.00	0.00	
		-40.96 R	-31.51	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.59 L	31.22	120.72	0.0	0.00	0.00	0.00	
		-44.06 R	-33.89	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.76 R	42.12	185.72	0.0	0.00	0.00	0.00	
		-38.13 R	-29.33	165.07	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 58.99	106.2
HS20	4.92	6.65	4.92	6.65	HS 98.31	177.0
2F1	7.60	9.81	7.60	9.81	0.00	114.0
3F1	6.29	6.84	6.29	6.84	0.00	144.7
4F1	6.86	6.36	6.86	6.36	0.00	171.8

5C1

5.09

7.35

5.09

7.35

0.00

203.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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
-1.2	-14.2

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	189.6	-151.9	170.4	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.1	-253.2	284.1	-285.2

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	16.56	L	12.74	113.11	0.0	24.52	18.86	141.11		
		-55.60	L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54	
OPER	HS20	16.56	L	12.74	113.11	0.0	24.52	18.86	141.11		
		-55.60	L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54	
OPER	2F1	13.04	L	10.03	131.11	0.0	0.00	0.00	0.00		
		-33.41	R	-25.70	160.68	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	15.50	R	11.92	186.98	0.0	0.00	0.00	0.00		
		-47.91	R	-36.86	163.07	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.47	R	12.67	190.98	0.0	0.00	0.00	0.00		
		-51.54	R	-39.65	166.28	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	29.46	R	22.66	188.11	0.0	0.00	0.00	0.00		
		-42.19	R	-32.46	166.68	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	7.73	2.73	6.95	3.08	HS 54.66	98.4
HS20	12.89	4.55	11.59	5.13	HS 91.09	164.0
2F1	24.24	7.58	21.79	8.54	0.00	113.7
3F1	20.40	5.28	18.33	5.95	0.00	121.6
4F1	19.19	4.91	17.25	5.53	0.00	132.7
5C1	10.73	6.00	9.64	6.76	0.00	240.1

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.	6.900		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 for LL+I (-)	(+)
INV.	90.8	-65.1	74.5
OPER	151.3	-108.6	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	-29.42	2.96	-22.63	2.28	-23.47	3.20	-18.05	2.46
OPER	HS20	-29.42	2.96	-22.63	2.28	-23.47	3.20	-18.05	2.46
OPER	2F1	-17.31	1.99	-13.32	1.53	0.00	0.00	0.00	0.00
OPER	3F1	-23.90	2.86	-18.38	2.20	0.00	0.00	0.00	0.00
OPER	4F1	-24.62	3.08	-18.94	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-22.35	2.90	-17.19	2.23	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.30	HS 44.29	79.7
HS20	3.69	38.84	HS 73.82	132.9
2F1	6.27	62.32	0.00	94.1
3F1	4.54	43.44	0.00	104.5
4F1	4.41	40.37	0.00	119.1
5C1	4.86	42.81	0.00	194.3

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. 6.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.2

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. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	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. w/o imp.	Load 1	Load 2
INV.	HS20	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	HS20	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	2F1	13.04 L	10.03	131.11	0.0	0.00	0.00	0.00	
		-33.41 R	-25.70	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.50 R	11.92	186.98	0.0	0.00	0.00	0.00	
		-47.91 R	-36.86	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.47 R	12.67	190.98	0.0	0.00	0.00	0.00	
		-51.54 R	-39.65	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.46 R	22.66	188.11	0.0	0.00	0.00	0.00	
		-42.19 R	-32.46	166.68	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.22	2.85	7.22	2.85	HS 56.98	102.6
HS20	12.02	4.75	12.02	4.75	HS 94.96	170.9
2F1	22.61	7.90	22.61	7.90	0.00	118.5
3F1	19.03	5.51	19.03	5.51	0.00	126.7
4F1	17.91	5.12	17.91	5.12	0.00	138.3

5C1 10.01 6.26 10.01 6.26 0.00 250.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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
-2.8 -33.7

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	202.2	-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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	2F1	12.40 R	9.54	184.59	0.0	0.00	0.00	0.00	0.00		
		-38.26 R	-29.43	160.68	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.75 R	13.65	186.98	0.0	0.00	0.00	0.00	0.00		
		-61.89 L	-47.61	139.07	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	19.02 R	14.63	190.20	0.0	0.00	0.00	0.00	0.00		
		-72.40 L	-55.69	138.28	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	16.07 R	12.36	226.38	0.0	0.00	0.00	0.00	0.00		
		-59.66 R	-45.89	148.28	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	10.07	1.46	9.12	1.66	HS 29.25	52.6
HS20	16.79	2.44	15.19	2.77	HS 48.74	87.7
2F1	27.17	6.07	24.59	6.91	0.00	91.1
3F1	19.00	3.75	17.19	4.27	0.00	86.3
4F1	17.72	3.21	16.04	3.65	0.00	86.6
5C1	20.98	3.89	18.99	4.43	0.00	155.7

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.	7.000		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	-64.0	64.2
OPER	151.3	-106.6	107.0

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	-29.42	33.97	-22.63	26.13	-23.47	25.86	-18.05	19.89
OPER	HS20	-29.42	33.97	-22.63	26.13	-23.47	25.86	-18.05	19.89
OPER	2F1	-17.31	19.34	-13.32	14.87	0.00	0.00	0.00	0.00
OPER	3F1	-23.90	27.22	-18.38	20.94	0.00	0.00	0.00	0.00
OPER	4F1	-24.62	28.64	-18.94	22.03	0.00	0.00	0.00	0.00
OPER	5C1	-22.35	25.68	-17.19	19.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
HS20	3.15	3.15	HS 63.00	113.4
2F1	5.53	5.53	0.00	82.9
3F1	3.93	3.93	0.00	90.4
4F1	3.74	3.74	0.00	100.9
5C1	4.19	4.17	0.00	166.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -33.7

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. 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 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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	2F1	12.40 R	9.54	184.59	0.0	0.00	0.00	0.00	
		-38.26 R	-29.43	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.75 R	13.65	186.98	0.0	0.00	0.00	0.00	
		-61.89 L	-47.61	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	19.02 R	14.63	190.20	0.0	0.00	0.00	0.00	
		-72.40 L	-55.69	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	16.07 R	12.36	226.38	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.44	1.53	9.44	1.53	HS 30.60	55.1
HS20	15.73	2.55	15.73	2.55	HS 51.00	91.8
2F1	25.46	6.35	25.46	6.35	0.00	95.3
3F1	17.80	3.93	17.80	3.93	0.00	90.3
4F1	16.60	3.36	16.60	3.36	0.00	90.6

5C1	19.66	4.07	19.66	4.07	0.00	162.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.225

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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
-2.8 -33.7

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	202.2	-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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	2F1	12.40 R	9.54	184.59	0.0	0.00	0.00	0.00	0.00		
		-38.26 R	-29.43	160.68	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.75 R	13.65	186.98	0.0	0.00	0.00	0.00	0.00		
		-61.89 L	-47.61	139.07	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	19.02 R	14.63	190.20	0.0	0.00	0.00	0.00	0.00		
		-72.40 L	-55.69	138.28	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	16.07 R	12.36	226.38	0.0	0.00	0.00	0.00	0.00		
		-59.66 R	-45.89	148.28	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	10.07	1.46	9.12	1.66	HS 29.25	52.6
HS20	16.79	2.44	15.19	2.77	HS 48.74	87.7
2F1	27.17	6.07	24.59	6.91	0.00	91.1
3F1	19.00	3.75	17.19	4.27	0.00	86.3
4F1	17.72	3.21	16.04	3.65	0.00	86.6
5C1	20.98	3.89	18.99	4.43	0.00	155.7

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.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-9.0	8.7

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.0	64.2
OPER	151.3	-106.6	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	-33.80	33.97	-26.00	26.13	-25.99	25.86	-20.00	19.89
OPER	HS20	-33.80	33.97	-26.00	26.13	-25.99	25.86	-20.00	19.89
OPER	2F1	-19.28	19.34	-14.83	14.87	0.00	0.00	0.00	0.00
OPER	3F1	-27.11	27.22	-20.85	20.94	0.00	0.00	0.00	0.00
OPER	4F1	-28.49	28.64	-21.92	22.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.42	25.68	-19.55	19.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.89	1.89	HS 37.80	68.0
HS20	3.15	3.15	HS 63.00	113.4
2F1	5.53	5.53	0.00	82.9
3F1	3.93	3.93	0.00	90.4
4F1	3.74	3.74	0.00	100.9
5C1	4.19	4.17	0.00	166.7

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. 7.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.8 -33.7

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. 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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	2F1	12.40 R	9.54	184.59	0.0	0.00	0.00	0.00	
		-38.26 R	-29.43	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.75 R	13.65	186.98	0.0	0.00	0.00	0.00	
		-61.89 L	-47.61	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	19.02 R	14.63	190.20	0.0	0.00	0.00	0.00	
		-72.40 L	-55.69	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	16.07 R	12.36	226.38	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.44	1.53	9.44	1.53	HS 30.60	55.1
HS20	15.73	2.55	15.73	2.55	HS 51.00	91.8
2F1	25.46	6.35	25.46	6.35	0.00	95.3
3F1	17.80	3.93	17.80	3.93	0.00	90.3
4F1	16.60	3.36	16.60	3.36	0.00	90.6

5C1	19.66	4.07	19.66	4.07	0.00	162.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-1.3 -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	190.2	-151.4	171.0	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.0	-252.3	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	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89			
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93		155.46	
OPER	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89			
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93		155.46	
OPER	2F1	12.71 R	9.78	155.89	0.0	0.00	0.00	0.00		0.00	
		-32.76 L	-25.20	126.33	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	12.59 L	9.69	100.02	0.0	0.00	0.00	0.00		0.00	
		-47.00 L	-36.15	123.93	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	13.39 L	10.30	96.02	0.0	0.00	0.00	0.00		0.00	
		-50.57 L	-38.90	120.72	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	26.62 L	20.48	98.89	0.0	0.00	0.00	0.00		0.00	
		-41.17 L	-31.67	119.54	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	7.76	2.77	6.97	3.12	HS 55.44	99.8
HS20	12.93	4.62	11.62	5.21	HS 92.41	166.3
2F1	24.95	7.70	22.43	8.68	0.00	115.5
3F1	25.17	5.37	22.63	6.05	0.00	123.4
4F1	23.68	4.99	21.29	5.62	0.00	134.7
5C1	11.91	6.13	10.71	6.91	0.00	245.1

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.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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	109.0

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	-3.79	29.62	-2.92	22.79	-3.74	23.37	-2.88	17.97
OPER	HS20	-3.79	29.62	-2.92	22.79	-3.74	23.37	-2.88	17.97
OPER	2F1	-2.45	17.40	-1.89	13.38	0.00	0.00	0.00	0.00
OPER	3F1	-3.51	24.05	-2.70	18.50	0.00	0.00	0.00	0.00
OPER	4F1	-3.74	24.80	-2.88	19.08	0.00	0.00	0.00	0.00
OPER	5C1	-3.62	22.61	-2.78	17.39	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	19.58	2.21	HS 44.15	79.5
HS20	32.63	3.68	HS 73.58	132.4
2F1	50.43	6.26	0.00	94.0
3F1	35.25	4.53	0.00	104.2
4F1	33.10	4.39	0.00	118.6
5C1	34.20	4.82	0.00	192.8

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 Superimposed Dead Load
Moment Moment
-1.3 -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 263.0	279.4	-279.4	279.4	-279.4	295.8	-263.0	295.8	-

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	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89	
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46
OPER	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89	
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46
OPER	2F1	12.71 R	9.78	155.89	0.0	0.00	0.00	0.00	
		-32.76 L	-25.20	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.59 L	9.69	100.02	0.0	0.00	0.00	0.00	
		-47.00 L	-36.15	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	13.39 L	10.30	96.02	0.0	0.00	0.00	0.00	
		-50.57 L	-38.90	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.62 L	20.48	98.89	0.0	0.00	0.00	0.00	
		-41.17 L	-31.67	119.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.24	2.89	7.24	2.89	HS 57.81	104.1
HS20	12.06	4.82	12.06	4.82	HS 96.34	173.4
2F1	23.27	8.03	23.27	8.03	0.00	120.4
3F1	23.49	5.60	23.49	5.60	0.00	128.7
4F1	22.09	5.20	22.09	5.20	0.00	140.4

5C1	11.11	6.39	11.11	6.39	0.00	255.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 -1.0

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	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-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	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28			
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10		
OPER	HS20	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28			
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10		
OPER	2F1	36.49 R	28.07	158.28	0.0	0.00	0.00	0.00	0.00		
		-28.08 L	-21.60	126.33	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	44.04 R	33.87	162.28	0.0	0.00	0.00	0.00	0.00		
		-40.29 L	-30.99	123.93	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	40.32 R	31.01	166.28	0.0	0.00	0.00	0.00	0.00		
		-43.35 L	-33.35	120.72	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	52.75 L	40.58	101.28	0.0	0.00	0.00	0.00	0.00		
		-37.44 L	-28.80	121.93	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	3.21	3.84	2.87	4.30	HS 57.37	103.3
HS20	5.35	6.41	4.78	7.17	HS 95.61	172.1
2F1	8.27	9.53	7.39	10.67	0.00	110.9
3F1	6.85	6.64	6.12	7.43	0.00	140.9
4F1	7.48	6.17	6.69	6.91	0.00	166.6
5C1	5.72	7.15	5.11	8.00	0.00	204.5

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
0.4	0.0	5.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.1	66.6
OPER	151.3	-121.8	111.0

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	-3.79	24.99	-2.92	19.22	-4.48	20.63	-3.45	15.87
OPER	HS20	-3.79	24.99	-2.92	19.22	-4.48	20.63	-3.45	15.87
OPER	2F1	-2.45	15.20	-1.89	11.69	0.00	0.00	0.00	0.00
OPER	3F1	-3.51	20.59	-2.70	15.84	0.00	0.00	0.00	0.00
OPER	4F1	-3.74	21.23	-2.88	16.33	0.00	0.00	0.00	0.00
OPER	5C1	-5.22	19.38	-4.02	14.91	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.32	2.66	HS 53.29	95.9
HS20	27.19	4.44	HS 88.82	159.9
2F1	49.62	7.30	0.00	109.5
3F1	34.69	5.39	0.00	124.0
4F1	32.57	5.23	0.00	141.1
5C1	23.31	5.72	0.00	229.0

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. 7.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -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. 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	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28	
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10
OPER	HS20	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28	
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10
OPER	2F1	36.49 R	28.07	158.28	0.0	0.00	0.00	0.00	
		-28.08 L	-21.60	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	44.04 R	33.87	162.28	0.0	0.00	0.00	0.00	
		-40.29 L	-30.99	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	40.32 R	31.01	166.28	0.0	0.00	0.00	0.00	
		-43.35 L	-33.35	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	52.75 L	40.58	101.28	0.0	0.00	0.00	0.00	
		-37.44 L	-28.80	121.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.65	107.4
HS20	4.97	6.66	4.97	6.66	HS 99.42	179.0
2F1	7.69	9.91	7.69	9.91	0.00	115.3
3F1	6.37	6.91	6.37	6.91	0.00	146.5
4F1	6.96	6.42	6.96	6.42	0.00	173.3

5C1

5.32

7.43

5.32

7.43

0.00

212.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)					
	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.7	8.8

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	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	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68			
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00		
OPER	HS20	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68			
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00		
OPER	2F1	53.88 R	41.44	160.68	0.0	0.00	0.00	0.00			
		-23.40 L	-18.00	126.33	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	67.90 R	52.23	164.68	0.0	0.00	0.00	0.00			
		-33.57 L	-25.82	123.93	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	69.04 R	53.11	164.68	0.0	0.00	0.00	0.00			
		-36.12 L	-27.79	120.72	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	70.94 L	54.57	103.68	0.0	0.00	0.00	0.00			
		-35.87 L	-27.59	122.72	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	2.14	4.79	1.91	5.35	HS 38.15	68.7
HS20	3.57	7.99	3.18	8.91	HS 63.59	114.5
2F1	5.40	11.89	4.81	13.25	0.00	72.2
3F1	4.29	8.28	3.82	9.24	0.00	87.8
4F1	4.22	7.70	3.75	8.59	0.00	101.4
5C1	4.10	7.75	3.65	8.65	0.00	146.1

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.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load 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	67.8
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	-4.89	20.39	-3.76	15.68	-6.71	17.75	-5.16	13.65
OPER	HS20	-4.89	20.39	-3.76	15.68	-6.71	17.75	-5.16	13.65
OPER	2F1	-3.50	12.84	-2.69	9.88	0.00	0.00	0.00	0.00
OPER	3F1	-3.74	16.99	-2.88	13.07	0.00	0.00	0.00	0.00
OPER	4F1	-3.74	17.49	-2.88	13.45	0.00	0.00	0.00	0.00
OPER	5C1	-7.02	16.15	-5.40	12.43	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.72	3.32	HS 66.47	119.6
HS20	17.86	5.54	HS 110.78	199.4
2F1	34.21	8.80	0.00	131.9
3F1	32.04	6.65	0.00	152.9
4F1	32.04	6.46	0.00	174.4
5C1	17.06	6.99	0.00	279.7

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 0.7
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	-163.8	171.4	-163.8	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 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	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68	
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00
OPER	HS20	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68	
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00
OPER	2F1	53.88 R	41.44	160.68	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	67.90 R	52.23	164.68	0.0	0.00	0.00	0.00	
		-33.57 L	-25.82	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	69.04 R	53.11	164.68	0.0	0.00	0.00	0.00	
		-36.12 L	-27.79	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	70.94 L	54.57	103.68	0.0	0.00	0.00	0.00	
		-35.87 L	-27.59	122.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.98	1.99	4.98	HS 39.73	71.5
HS20	3.31	8.30	3.31	8.30	HS 66.22	119.2
2F1	5.01	12.35	5.01	12.35	0.00	75.1
3F1	3.97	8.60	3.97	8.60	0.00	91.4
4F1	3.91	8.00	3.91	8.00	0.00	105.6

5C1	3.81	8.05	3.81	8.05	0.00	152.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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. 7.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

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	171.2	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.3	-284.0	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	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07			
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00		
OPER	HS20	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07			
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00		
OPER	2F1	63.46 R	48.82	163.07	0.0	0.00	0.00	0.00			
		-18.72 L	-14.40	126.33	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	80.32 R	61.78	163.07	0.0	0.00	0.00	0.00			
		-26.86 L	-20.66	123.93	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	85.78 R	65.98	167.07	0.0	0.00	0.00	0.00			
		-28.90 L	-22.23	120.72	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.90 R	62.23	165.07	0.0	0.00	0.00	0.00			
		-35.49 R	-27.30	185.72	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	1.88	6.12	1.67	6.81	HS 33.43	60.2
HS20	3.14	10.20	2.79	11.35	HS 55.72	100.3
2F1	4.50	15.17	3.99	16.88	0.00	59.9
3F1	3.55	10.57	3.15	11.76	0.00	72.5
4F1	3.33	9.83	2.95	10.93	0.00	79.7
5C1	3.53	8.00	3.13	8.90	0.00	125.3

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.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	0.0	1.4

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	-9.38	17.02	-7.21	13.09	-9.23	14.82	-7.10	11.40
OPER	HS20	-9.38	17.02	-7.21	13.09	-9.23	14.82	-7.10	11.40
OPER	2F1	-5.52	10.41	-4.25	8.01	0.00	0.00	0.00	0.00
OPER	3F1	-6.51	13.39	-5.01	10.30	0.00	0.00	0.00	0.00
OPER	4F1	-5.51	13.53	-4.24	10.41	0.00	0.00	0.00	0.00
OPER	5C1	-8.97	13.22	-6.90	10.17	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.54	4.05	HS 81.04	145.9
HS20	12.56	6.75	HS 135.07	243.1
2F1	21.34	11.04	0.00	165.5
3F1	18.10	8.58	0.00	197.4
4F1	21.37	8.49	0.00	229.4
5C1	13.13	8.69	0.00	347.8

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. 7.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

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. 176.8	173.8	-161.5	173.8	-161.5	158.4	-176.8	158.4	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

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	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07	
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00
OPER	HS20	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07	
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00
OPER	2F1	63.46 R	48.82	163.07	0.0	0.00	0.00	0.00	
		-18.72 L	-14.40	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	80.32 R	61.78	163.07	0.0	0.00	0.00	0.00	
		-26.86 L	-20.66	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	85.78 R	65.98	167.07	0.0	0.00	0.00	0.00	
		-28.90 L	-22.23	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.90 R	62.23	165.07	0.0	0.00	0.00	0.00	
		-35.49 R	-27.30	185.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.35	1.74	6.35	HS 34.85	62.7
HS20	2.90	10.58	2.90	10.58	HS 58.08	104.5
2F1	4.16	15.74	4.16	15.74	0.00	62.4
3F1	3.29	10.97	3.29	10.97	0.00	75.6
4F1	3.08	10.20	3.08	10.20	0.00	83.1

5C1	3.26	8.31	3.26	8.31	0.00	130.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.318

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.48		107.0

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	11.96	1.00	33000.	73.86	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 1.2
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	170.5	-171.0	151.3	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.1	252.2	-317.1

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	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46			
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00		
OPER	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46			
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00		
OPER	2F1	64.71 R	49.77	165.46	0.0	0.00	0.00	0.00			
		-16.94 R	-13.03	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	85.89 L	66.07	145.46	0.0	0.00	0.00	0.00			
		-24.24 R	-18.65	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	89.18 L	68.60	141.46	0.0	0.00	0.00	0.00			
		-25.98 R	-19.99	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.06 L	64.66	104.46	0.0	0.00	0.00	0.00			
		-36.69 R	-28.23	186.59	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	1.92	6.24	1.71	6.94	HS 34.13	61.4
HS20	3.20	10.39	2.84	11.56	HS 56.88	102.4
2F1	4.39	16.82	3.90	18.71	0.00	58.5
3F1	3.31	11.76	2.94	13.08	0.00	67.5
4F1	3.19	10.97	2.83	12.20	0.00	76.4
5C1	3.38	7.77	3.00	8.64	0.00	120.0

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.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-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	-13.48	13.52	-10.37	10.40	-11.97	11.93	-9.21	9.17
OPER	HS20	-13.48	13.52	-10.37	10.40	-11.97	11.93	-9.21	9.17
OPER	2F1	-7.76	8.01	-5.97	6.16	0.00	0.00	0.00	0.00
OPER	3F1	-9.63	9.93	-7.41	7.64	0.00	0.00	0.00	0.00
OPER	4F1	-9.05	9.46	-6.97	7.27	0.00	0.00	0.00	0.00
OPER	5C1	-11.02	10.75	-8.48	8.27	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.16	5.19	HS 103.10	185.6
HS20	8.59	8.64	HS 171.83	309.3
2F1	14.93	14.60	0.00	219.0
3F1	12.03	11.77	0.00	270.8
4F1	12.79	12.36	0.00	333.8
5C1	10.51	10.88	0.00	420.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
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	-
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

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	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46	
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00
OPER	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46	
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00
OPER	2F1	64.71 R	49.77	165.46	0.0	0.00	0.00	0.00	
		-16.94 R	-13.03	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	85.89 L	66.07	145.46	0.0	0.00	0.00	0.00	
		-24.24 R	-18.65	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	89.18 L	68.60	141.46	0.0	0.00	0.00	0.00	
		-25.98 R	-19.99	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.06 L	64.66	104.46	0.0	0.00	0.00	0.00	
		-36.69 R	-28.23	186.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	6.47	1.78	6.47	HS 35.58	64.0
HS20	2.96	10.78	2.96	10.78	HS 59.30	106.7
2F1	4.06	17.46	4.06	17.46	0.00	61.0
3F1	3.06	12.20	3.06	12.20	0.00	70.4
4F1	2.95	11.39	2.95	11.39	0.00	79.6

5C1 3.13 8.06 3.13 8.06 0.00 125.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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. 7.600 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

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	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

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	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85			
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00		
OPER	HS20	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85			
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00		
OPER	2F1	64.11 L	49.32	147.85	0.0	0.00	0.00	0.00			
		-22.81 R	-17.55	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.45 L	62.65	147.85	0.0	0.00	0.00	0.00			
		-32.64 R	-25.11	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	86.98 L	66.91	143.85	0.0	0.00	0.00	0.00			
		-34.98 R	-26.91	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	79.69 L	61.30	106.85	0.0	0.00	0.00	0.00			
		-38.85 R	-29.88	188.20	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	4.57	1.66	5.09	HS 33.16	59.7
HS20	3.11	7.62	2.76	8.48	HS 55.27	99.5
2F1	4.49	12.33	3.99	13.73	0.00	59.9
3F1	3.54	8.62	3.14	9.60	0.00	72.3
4F1	3.31	8.04	2.94	8.96	0.00	79.5
5C1	3.61	7.24	3.21	8.06	0.00	128.5

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.	7.600		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	151.3	-113.8	118.9

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	-17.12	9.55	-13.17	7.34	-14.86	9.16	-11.43	7.04
OPER	HS20	-17.12	9.55	-13.17	7.34	-14.86	9.16	-11.43	7.04
OPER	2F1	-10.14	5.72	-7.80	4.40	0.00	0.00	0.00	0.00
OPER	3F1	-13.03	6.70	-10.02	5.16	0.00	0.00	0.00	0.00
OPER	4F1	-13.13	5.60	-10.10	4.31	0.00	0.00	0.00	0.00
OPER	5C1	-13.38	8.43	-10.29	6.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.99	7.47	HS 79.76	143.6
HS20	6.65	12.46	HS 132.93	239.3
2F1	11.22	20.80	0.00	168.3
3F1	8.73	17.74	0.00	200.9
4F1	8.67	21.24	0.00	234.0
5C1	8.51	14.10	0.00	340.3

SERVICEABILITY 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 0.9
Superimposed Dead Load Moment 11.7

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. 175.2	172.7	-162.6	172.7	-162.6	160.1	-175.2	160.1	-
OPER 292.0	279.4	-279.4	279.4	-279.4	266.8	-292.0	266.8	-

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	92.63 L	71.26 R	129.85 200.20	0.0	72.64 -29.05	55.87 -22.34	157.85 176.98	
OPER	HS20	92.63 L	71.26 R	129.85 200.20	0.0	72.64 -29.05	55.87 -22.34	157.85 176.98	0.00
OPER	2F1	64.11 L	49.32 R	147.85 184.59	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	3F1	81.45 L	62.65 R	147.85 186.98	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	4F1	86.98 L	66.91 R	143.85 190.20	0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00
OPER	5C1	79.69 L	61.30 R	106.85 188.20	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	1.73	4.74	1.73	4.74	HS 34.56	62.2
HS20	2.88	7.91	2.88	7.91	HS 57.59	103.7
2F1	4.16	12.80	4.16	12.80	0.00	62.4
3F1	3.28	8.95	3.28	8.95	0.00	75.3
4F1	3.07	8.35	3.07	8.35	0.00	82.8

5C1 3.35 7.52 3.35 7.52 0.00 133.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
0.3 3.9

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	177.9	-163.7	158.7	-182.9
OPER	300.6C	-268.7	268.7	-300.6C	296.5	-272.8	264.5	-304.8

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	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24			
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00		
OPER	HS20	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24			
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00		
OPER	2F1	55.29 L	42.53	150.24	0.0	0.00	0.00	0.00			
		-28.68 R	-22.06	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	69.87 L	53.75	146.24	0.0	0.00	0.00	0.00			
		-41.04 R	-31.57	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	71.19 L	54.77	146.24	0.0	0.00	0.00	0.00			
		-43.98 R	-33.83	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	68.27 L	52.51	144.24	0.0	0.00	0.00	0.00			
		-42.18 R	-32.45	188.20	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	2.12	3.53	1.89	3.94	HS 37.88	68.2
HS20	3.54	5.88	3.16	6.56	HS 63.14	113.7
2F1	5.36	9.51	4.78	10.62	0.00	71.8
3F1	4.24	6.65	3.79	7.43	0.00	87.1
4F1	4.16	6.20	3.71	6.93	0.00	100.3
5C1	4.34	6.47	3.88	7.22	0.00	155.0

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
-0.3	-4.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.1	72.6
OPER	151.3	-111.8	120.9

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	-20.51	5.15	-15.77	3.96	-17.81	6.59	-13.70	5.07
OPER	HS20	-20.51	5.15	-15.77	3.96	-17.81	6.59	-13.70	5.07
OPER	2F1	-12.57	3.63	-9.67	2.79	0.00	0.00	0.00	0.00
OPER	3F1	-16.60	3.81	-12.77	2.93	0.00	0.00	0.00	0.00
OPER	4F1	-17.14	3.00	-13.19	2.31	0.00	0.00	0.00	0.00
OPER	5C1	-16.06	6.32	-12.35	4.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	11.02	HS 65.44	117.8
HS20	5.45	18.36	HS 109.07	196.3
2F1	8.89	33.34	0.00	133.4
3F1	6.74	31.74	0.00	154.9
4F1	6.52	40.29	0.00	176.1
5C1	6.96	19.13	0.00	278.5

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. 7.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.3
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. 170.1	169.3	-166.0	169.3	-166.0	165.2	-170.1	165.2	-
OPER 283.5	279.4	-279.4	279.4	-279.4	275.3	-283.5	275.3	-

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	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24	
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00
OPER	HS20	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24	
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00
OPER	2F1	55.29 L	42.53	150.24	0.0	0.00	0.00	0.00	
		-28.68 R	-22.06	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	69.87 L	53.75	146.24	0.0	0.00	0.00	0.00	
		-41.04 R	-31.57	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	71.19 L	54.77	146.24	0.0	0.00	0.00	0.00	
		-43.98 R	-33.83	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	68.27 L	52.51	144.24	0.0	0.00	0.00	0.00	
		-42.18 R	-32.45	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.97	3.66	1.97	3.66	HS 39.42	71.0
HS20	3.29	6.11	3.29	6.11	HS 65.71	118.3
2F1	4.98	9.89	4.98	9.89	0.00	74.7
3F1	3.94	6.91	3.94	6.91	0.00	90.6
4F1	3.87	6.45	3.87	6.45	0.00	104.4

5C1 4.03 6.72 4.03 6.72 0.00 161.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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
-0.7 -8.4

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	185.8	-155.7	166.7	-174.9
OPER	300.6C	-268.7	268.7	-300.6C	309.7	-259.5	277.8	-291.5

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	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63			
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10		
OPER	HS20	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63			
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10		
OPER	2F1	38.43 L	29.56	152.63	0.0	0.00	0.00	0.00			
		-34.55 R	-26.58	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.95 L	36.12	148.63	0.0	0.00	0.00	0.00			
		-49.43 R	-38.03	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.48 L	33.45	144.63	0.0	0.00	0.00	0.00			
		-52.98 R	-40.76	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00			
		-46.11 R	-35.47	188.98	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	3.13	2.78	2.80	3.13	HS 55.68	100.2
HS20	5.21	4.64	4.67	5.21	HS 92.80	167.0
2F1	8.06	7.51	7.23	8.44	0.00	108.4
3F1	6.60	5.25	5.92	5.90	0.00	120.8
4F1	7.12	4.90	6.39	5.50	0.00	132.3
5C1	6.64	5.63	5.96	6.32	0.00	225.1

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	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-65.9	73.7
OPER	151.3	-109.8	122.9

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	-24.68	2.79	-18.98	2.15	-20.73	4.29	-15.95	3.30
OPER	HS20	-24.68	2.79	-18.98	2.15	-20.73	4.29	-15.95	3.30
OPER	2F1	-14.96	1.96	-11.51	1.51	0.00	0.00	0.00	0.00
OPER	3F1	-20.22	2.81	-15.55	2.16	0.00	0.00	0.00	0.00
OPER	4F1	-20.97	3.00	-16.13	2.31	0.00	0.00	0.00	0.00
OPER	5C1	-19.53	4.45	-15.03	3.42	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	17.18	HS 53.41	96.1
HS20	4.45	28.64	HS 89.02	160.2
2F1	7.34	62.80	0.00	110.1
3F1	5.43	43.78	0.00	125.0
4F1	5.24	40.95	0.00	141.4
5C1	5.62	27.61	0.00	224.9

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.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.7	-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. 162.2	164.0	-171.3	164.0	-171.3	173.1	-162.2	173.1	-
OPER 270.3	279.4	-279.4	279.4	-279.4	288.5	-270.3	288.5	-

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	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63	
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10
OPER	HS20	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63	
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10
OPER	2F1	38.43 L	29.56	152.63	0.0	0.00	0.00	0.00	
		-34.55 R	-26.58	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.95 L	36.12	148.63	0.0	0.00	0.00	0.00	
		-49.43 R	-38.03	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.48 L	33.45	144.63	0.0	0.00	0.00	0.00	
		-52.98 R	-40.76	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00	
		-46.11 R	-35.47	188.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.91	2.90	2.91	2.90	HS 57.99	104.4
HS20	4.85	4.83	4.85	4.83	HS 96.65	174.0
2F1	7.51	7.82	7.51	7.82	0.00	112.6
3F1	6.14	5.47	6.14	5.47	0.00	125.8
4F1	6.64	5.10	6.64	5.10	0.00	137.7

5C1

6.19

5.86

6.19

5.86

0.00

234.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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
-2.1	-25.0

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	196.6	-144.9	177.4	-164.1
OPER	300.6C	-268.7	268.7	-300.6C	327.7	-241.6	295.7	-273.6

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	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03			
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98		153.07	
OPER	HS20	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03			
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98		153.07	
OPER	2F1	14.70 L	11.31	155.03	0.0	0.00	0.00	0.00		0.00	
		-40.42 R	-31.10	184.59	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	12.74 L	9.80	151.03	0.0	0.00	0.00	0.00		0.00	
		-57.83 R	-44.48	186.98	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	7.14 L	5.49	119.93	0.0	0.00	0.00	0.00		0.00	
		-61.98 R	-47.68	190.20	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	21.24 L	16.34	114.03	0.0	0.00	0.00	0.00		0.00	
		-53.16 R	-40.89	193.77	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	9.37	2.14	8.45	2.42	HS 42.84	77.1
HS20	15.61	3.57	14.09	4.04	HS 71.39	128.5
2F1	22.30	5.98	20.12	6.77	0.00	89.6
3F1	25.73	4.18	23.22	4.73	0.00	96.1
4F1	45.91	3.90	41.43	4.41	0.00	105.2
5C1	15.43	4.55	13.93	5.15	0.00	181.8

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.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-7.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.7	74.9
OPER	151.3	-107.9	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	-29.37	2.91	-22.59	2.24	-23.54	2.89	-18.11	2.22
OPER	HS20	-29.37	2.91	-22.59	2.24	-23.54	2.89	-18.11	2.22
OPER	2F1	-17.21	1.96	-13.24	1.51	0.00	0.00	0.00	0.00
OPER	3F1	-23.73	2.81	-18.25	2.16	0.00	0.00	0.00	0.00
OPER	4F1	-24.50	3.02	-18.84	2.32	0.00	0.00	0.00	0.00
OPER	5C1	-22.95	2.86	-17.65	2.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.20	25.74	HS 44.07	79.3
HS20	3.67	42.90	HS 73.45	132.2
2F1	6.27	63.81	0.00	94.0
3F1	4.55	44.48	0.00	104.6
4F1	4.40	41.34	0.00	118.9
5C1	4.70	43.65	0.00	188.0

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. 7.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.1 -25.0

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. 151.4	156.8	-178.5	156.8	-178.5	183.9	-151.4	183.9	-
OPER 252.3	279.4	-279.4	279.4	-279.4	306.5	-252.3	306.5	-

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	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	HS20	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	2F1	14.70 L	11.31	155.03	0.0	0.00	0.00	0.00	
		-40.42 R	-31.10	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.74 L	9.80	151.03	0.0	0.00	0.00	0.00	
		-57.83 R	-44.48	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	7.14 L	5.49	119.93	0.0	0.00	0.00	0.00	
		-61.98 R	-47.68	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.24 L	16.34	114.03	0.0	0.00	0.00	0.00	
		-53.16 R	-40.89	193.77	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.76	2.24	8.76	2.24	HS 44.74	80.5
HS20	14.60	3.73	14.60	3.73	HS 74.57	134.2
2F1	20.85	6.24	20.85	6.24	0.00	93.6
3F1	24.06	4.36	24.06	4.36	0.00	100.3
4F1	42.93	4.07	42.93	4.07	0.00	109.9

5C1	14.43	4.75	14.43	4.75	0.00	189.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.353

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.34		102.4

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	11.96	1.00	33000.	73.86	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
-3.8 -46.0

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	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85		
OPER	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85		
OPER	2F1	9.36 L	7.20	126.33	0.0	0.00	0.00	0.00			
		-46.29 R	-35.61	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.43 L	10.33	123.93	0.0	0.00	0.00	0.00			
		-68.97 L	-53.05	162.98	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.45 L	11.12	120.72	0.0	0.00	0.00	0.00			
		-82.31 L	-63.31	162.20	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	11.70 L	9.00	84.54	0.0	0.00	0.00	0.00			
		-73.05 L	-56.19	162.59	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	15.10	1.30	13.72	1.49	HS 26.04	46.9
HS20	25.17	2.17	22.87	2.49	HS 43.39	78.1
2F1	37.44	4.73	34.02	5.42	0.00	70.9
3F1	26.09	3.17	23.71	3.64	0.00	73.0
4F1	24.25	2.66	22.04	3.05	0.00	71.8
5C1	29.96	3.00	27.23	3.43	0.00	119.8

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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.9	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.5	62.6
OPER	151.3	-105.9	104.4

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	-29.37	36.19	-22.59	27.84	-23.54	26.36	-18.11	20.28
OPER	HS20	-29.37	36.19	-22.59	27.84	-23.54	26.36	-18.11	20.28
OPER	2F1	-17.21	19.94	-13.24	15.34	0.00	0.00	0.00	0.00
OPER	3F1	-23.73	28.51	-18.25	21.93	0.00	0.00	0.00	0.00
OPER	4F1	-24.50	30.46	-18.84	23.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.95	27.13	-17.65	20.87	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.88	1.73	HS 34.61	62.3
HS20	3.13	2.88	HS 57.68	103.8
2F1	5.51	5.23	0.00	78.5
3F1	3.92	3.66	0.00	84.2
4F1	3.74	3.43	0.00	92.5
5C1	4.05	3.85	0.00	153.9

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 -3.8
Superimposed Dead Load Moment -46.0

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. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	2F1	9.36 L	7.20	126.33	0.0	0.00	0.00	0.00	
		-46.29 R	-35.61	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.43 L	10.33	123.93	0.0	0.00	0.00	0.00	
		-68.97 L	-53.05	162.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.45 L	11.12	120.72	0.0	0.00	0.00	0.00	
		-82.31 L	-63.31	162.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	11.70 L	9.00	84.54	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.2
HS20	23.64	2.28	23.64	2.28	HS 45.52	81.9
2F1	35.17	4.96	35.17	4.96	0.00	74.4
3F1	24.51	3.33	24.51	3.33	0.00	76.6
4F1	22.78	2.79	22.78	2.79	0.00	75.3

5C1	28.14	3.14	28.14	3.14	0.00	125.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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
-3.8 -46.0

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	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93		
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85	
OPER	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93		
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85	
OPER	2F1	9.36 L	7.20	126.33	0.0	0.00	0.00	0.00		
		-46.29 R	-35.61	184.59	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	13.43 L	10.33	123.93	0.0	0.00	0.00	0.00		
		-68.97 L	-53.05	162.98	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	14.45 L	11.12	120.72	0.0	0.00	0.00	0.00		
		-82.31 L	-63.31	162.20	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	11.70 L	9.00	84.54	0.0	0.00	0.00	0.00		
		-73.05 L	-56.19	162.59	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	15.10	1.30	13.72	1.49	HS 26.04	46.9
HS20	25.17	2.17	22.87	2.49	HS 43.39	78.1
2F1	37.44	4.73	34.02	5.42	0.00	70.9
3F1	26.09	3.17	23.71	3.64	0.00	73.0
4F1	24.25	2.66	22.04	3.05	0.00	71.8
5C1	29.96	3.00	27.23	3.43	0.00	119.8

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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.9	-9.7	11.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.5	62.6
OPER	151.3	-105.9	104.4

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	-33.82	36.19	-26.01	27.84	-26.13	26.36	-20.10	20.28
OPER	HS20	-33.82	36.19	-26.01	27.84	-26.13	26.36	-20.10	20.28
OPER	2F1	-19.23	19.94	-14.79	15.34	0.00	0.00	0.00	0.00
OPER	3F1	-26.99	28.51	-20.76	21.93	0.00	0.00	0.00	0.00
OPER	4F1	-28.34	30.46	-21.80	23.43	0.00	0.00	0.00	0.00
OPER	5C1	-26.15	27.13	-20.12	20.87	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.88	1.73	HS 34.61	62.3
HS20	3.13	2.88	HS 57.68	103.8
2F1	5.51	5.23	0.00	78.5
3F1	3.92	3.66	0.00	84.2
4F1	3.74	3.43	0.00	92.5
5C1	4.05	3.85	0.00	153.9

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. 8.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -46.0

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. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	2F1	9.36 L	7.20	126.33	0.0	0.00	0.00	0.00	
		-46.29 R	-35.61	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.43 L	10.33	123.93	0.0	0.00	0.00	0.00	
		-68.97 L	-53.05	162.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.45 L	11.12	120.72	0.0	0.00	0.00	0.00	
		-82.31 L	-63.31	162.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	11.70 L	9.00	84.54	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.2
HS20	23.64	2.28	23.64	2.28	HS 45.52	81.9
2F1	35.17	4.96	35.17	4.96	0.00	74.4
3F1	24.51	3.33	24.51	3.33	0.00	76.6
4F1	22.78	2.79	22.78	2.79	0.00	75.3

5C1	28.14	3.14	28.14	3.14	0.00	125.7
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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	0.00
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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
-1.8	-21.7

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	194.4	-147.1	175.3	-166.3
OPER	300.6C	-268.7	268.7	-300.6C	324.1	-245.2	292.1	-277.2

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	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81			
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85		181.77	
OPER	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81			
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85		181.77	
OPER	2F1	10.13 R	7.79	179.81	0.0	0.00	0.00	0.00		0.00	0.00
		-31.44 L	-24.18	150.24	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	12.09 L	9.30	123.93	0.0	0.00	0.00	0.00		0.00	0.00
		-45.11 L	-34.70	147.85	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	12.85 L	9.88	119.93	0.0	0.00	0.00	0.00		0.00	0.00
		-48.54 L	-37.33	144.63	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	23.75 L	18.27	122.81	0.0	0.00	0.00	0.00		0.00	0.00
		-43.84 R	-33.72	202.46	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	9.27	2.71	8.35	3.06	HS 54.16	97.5
HS20	15.45	4.51	13.92	5.10	HS 90.27	162.5
2F1	32.01	7.80	28.85	8.82	0.00	117.0
3F1	26.82	5.44	24.17	6.15	0.00	125.0
4F1	25.22	5.05	22.73	5.71	0.00	136.4
5C1	13.65	5.59	12.30	6.32	0.00	223.8

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
0.8	0.0	9.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-75.8	63.8
OPER	151.3	-126.4	106.3

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	-0.56	32.21	-0.43	24.77	-1.24	24.21	-0.95	18.62
OPER	HS20	-0.56	32.21	-0.43	24.77	-1.24	24.21	-0.95	18.62
OPER	2F1	-0.39	18.37	-0.30	14.13	0.00	0.00	0.00	0.00
OPER	3F1	-0.56	25.81	-0.43	19.86	0.00	0.00	0.00	0.00
OPER	4F1	-0.60	26.99	-0.46	20.76	0.00	0.00	0.00	0.00
OPER	5C1	-0.85	24.44	-0.65	18.80	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.26	1.98	HS 39.62	71.3
HS20	102.10	3.30	HS 66.04	118.9
2F1	322.96	5.79	0.00	86.9
3F1	225.12	4.12	0.00	94.8
4F1	210.57	3.94	0.00	106.4
5C1	149.03	4.35	0.00	174.1

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. 8.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.8 -21.7

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. 153.6	158.3	-177.0	158.3	-177.0	181.7	-153.6	181.7	-
OPER 256.0	279.4	-279.4	279.4	-279.4	302.8	-256.0	302.8	-

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	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81	
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77
OPER	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81	
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77
OPER	2F1	10.13 R	7.79	179.81	0.0	0.00	0.00	0.00	
		-31.44 L	-24.18	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	12.09 L	9.30	123.93	0.0	0.00	0.00	0.00	
		-45.11 L	-34.70	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	12.85 L	9.88	119.93	0.0	0.00	0.00	0.00	
		-48.54 L	-37.33	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.75 L	18.27	122.81	0.0	0.00	0.00	0.00	
		-43.84 R	-33.72	202.46	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.66	2.83	8.66	2.83	HS 56.54	101.8
HS20	14.43	4.71	14.43	4.71	HS 94.23	169.6
2F1	29.91	8.14	29.91	8.14	0.00	122.1
3F1	25.06	5.68	25.06	5.68	0.00	130.5
4F1	23.57	5.27	23.57	5.27	0.00	142.4

5C1	12.75	5.84	12.75	5.84	0.00	233.6
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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
-0.2	-1.7

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	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	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20			
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02		
OPER	HS20	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20			
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02		
OPER	2F1	36.13 R	27.79	182.20	0.0	0.00	0.00	0.00			
		-27.95 L	-21.50	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	43.45 R	33.43	186.20	0.0	0.00	0.00	0.00			
		-40.09 L	-30.84	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	39.68 R	30.52	190.20	0.0	0.00	0.00	0.00			
		-43.14 L	-33.19	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	52.33 L	40.25	125.20	0.0	0.00	0.00	0.00			
		-37.74 L	-29.03	145.85	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	3.27	3.85	2.93	4.31	HS 58.55	105.4
HS20	5.46	6.42	4.88	7.19	HS 97.58	175.6
2F1	8.37	9.55	7.49	10.69	0.00	112.3
3F1	6.96	6.66	6.22	7.45	0.00	143.2
4F1	7.62	6.18	6.82	6.93	0.00	167.0
5C1	5.78	7.07	5.17	7.92	0.00	206.8

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.	8.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	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	-1.03	27.72	-0.79	21.32	-2.66	21.85	-2.05	16.81
OPER	HS20	-1.03	27.72	-0.79	21.32	-2.66	21.85	-2.05	16.81
OPER	2F1	-1.34	16.52	-1.03	12.71	0.00	0.00	0.00	0.00
OPER	3F1	-1.08	22.74	-0.83	17.49	0.00	0.00	0.00	0.00
OPER	4F1	-0.60	23.19	-0.46	17.84	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	21.45	-1.77	16.50	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	28.04	2.34	HS 46.89	84.4
HS20	46.74	3.91	HS 78.15	140.7
2F1	93.05	6.56	0.00	98.4
3F1	115.55	4.76	0.00	109.6
4F1	207.28	4.67	0.00	126.1
5C1	54.06	5.05	0.00	202.0

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. 8.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.7

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. 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 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	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85 110.02
OPER	HS20	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85 110.02
OPER	2F1	36.13 R	27.79	182.20	0.0	0.00	0.00	0.00
		-27.95 L	-21.50	150.24	0.0	0.00	0.00	0.00 0.00
OPER	3F1	43.45 R	33.43	186.20	0.0	0.00	0.00	0.00
		-40.09 L	-30.84	147.85	0.0	0.00	0.00	0.00 0.00
OPER	4F1	39.68 R	30.52	190.20	0.0	0.00	0.00	0.00
		-43.14 L	-33.19	144.63	0.0	0.00	0.00	0.00 0.00
OPER	5C1	52.33 L	40.25	125.20	0.0	0.00	0.00	0.00
		-37.74 L	-29.03	145.85	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	4.01	3.04	4.01	HS 60.88	109.6
HS20	5.07	6.68	5.07	6.68	HS 101.46	182.6
2F1	7.78	9.93	7.78	9.93	0.00	116.8
3F1	6.47	6.92	6.47	6.92	0.00	148.9
4F1	7.09	6.43	7.09	6.43	0.00	173.7

5C1

5.37

7.35

5.37

7.35

0.00

215.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
1.1	14.0

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	171.3	-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	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59			
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85		110.02	
OPER	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59			
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85		110.02	
OPER	2F1	57.25 R	44.04	184.59	0.0	0.00	0.00	0.00		0.00	
		-24.45 L	-18.81	150.24	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	72.90 R	56.08	188.59	0.0	0.00	0.00	0.00		0.00	
		-35.08 L	-26.99	147.85	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	73.89 R	56.84	188.59	0.0	0.00	0.00	0.00		0.00	
		-37.75 L	-29.04	144.63	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	75.15 L	57.80	127.59	0.0	0.00	0.00	0.00		0.00	
		-33.03 L	-25.40	145.85	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	1.93	4.68	1.71	5.21	HS 34.24	61.6
HS20	3.21	7.80	2.85	8.68	HS 57.06	102.7
2F1	4.99	11.60	4.43	12.91	0.00	66.4
3F1	3.92	8.09	3.48	9.00	0.00	80.0
4F1	3.87	7.52	3.43	8.36	0.00	92.7
5C1	3.80	8.59	3.38	9.56	0.00	135.0

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.	8.300		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	-122.4	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	22.80	-2.29	17.54	-4.42	19.32	-3.40	14.86
OPER	HS20	-2.98	22.80	-2.29	17.54	-4.42	19.32	-3.40	14.86
OPER	2F1	-2.72	14.43	-2.09	11.10	0.00	0.00	0.00	0.00
OPER	3F1	-2.89	19.35	-2.22	14.88	0.00	0.00	0.00	0.00
OPER	4F1	-2.11	19.93	-1.62	15.33	0.00	0.00	0.00	0.00
OPER	5C1	-4.05	18.62	-3.12	14.33	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.61	2.90	HS 58.05	104.5
HS20	27.69	4.84	HS 96.75	174.2
2F1	45.09	7.64	0.00	114.6
3F1	42.40	5.70	0.00	131.1
4F1	58.14	5.53	0.00	149.4
5C1	30.20	5.92	0.00	236.9

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. 8.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.0

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. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	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 Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85
OPER	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85
OPER	2F1	57.25 R	44.04	184.59	0.0	0.00	0.00	0.00
		-24.45 L	-18.81	150.24	0.0	0.00	0.00	0.00
OPER	3F1	72.90 R	56.08	188.59	0.0	0.00	0.00	0.00
		-35.08 L	-26.99	147.85	0.0	0.00	0.00	0.00
OPER	4F1	73.89 R	56.84	188.59	0.0	0.00	0.00	0.00
		-37.75 L	-29.04	144.63	0.0	0.00	0.00	0.00
OPER	5C1	75.15 L	57.80	127.59	0.0	0.00	0.00	0.00
		-33.03 L	-25.40	145.85	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	1.78	4.86	1.78	4.86	HS 35.69	64.2
HS20	2.97	8.10	2.97	8.10	HS 59.48	107.1
2F1	4.62	12.04	4.62	12.04	0.00	69.3
3F1	3.63	8.39	3.63	8.39	0.00	83.4
4F1	3.58	7.80	3.58	7.80	0.00	96.6

5C1	3.52	8.92	3.52	8.92	0.00	140.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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 2.0
Superimposed Dead Load Moment 25.2

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	164.1	-177.5	144.9	-196.7
OPER	300.6C	-268.7	268.7	-300.6C	273.4	-295.9	241.4	-327.9

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	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98			
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00		
OPER	HS20	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98			
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00		
OPER	2F1	71.28 R	54.83	186.98	0.0	0.00	0.00	0.00			
		-20.96 L	-16.12	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.46 R	69.58	186.98	0.0	0.00	0.00	0.00			
		-30.07 L	-23.13	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.53 R	74.25	190.98	0.0	0.00	0.00	0.00			
		-32.36 L	-24.89	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.45 R	69.58	188.98	0.0	0.00	0.00	0.00			
		-28.31 L	-21.78	145.85	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	1.59	5.69	1.40	6.31	HS 28.03	50.5
HS20	2.64	9.49	2.34	10.52	HS 46.71	84.1
2F1	3.84	14.12	3.39	15.64	0.00	50.8
3F1	3.02	9.84	2.67	10.90	0.00	61.4
4F1	2.83	9.14	2.50	10.13	0.00	67.5
5C1	3.02	10.45	2.67	11.58	0.00	106.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.400

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	67.4
OPER	151.3	-120.5	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	-6.62	18.34	-5.09	14.11	-6.50	16.67	-5.00	12.83
OPER	HS20	-6.62	18.34	-5.09	14.11	-6.50	16.67	-5.00	12.83
OPER	2F1	-4.36	12.14	-3.36	9.34	0.00	0.00	0.00	0.00
OPER	3F1	-5.11	15.69	-3.93	12.07	0.00	0.00	0.00	0.00
OPER	4F1	-4.32	16.29	-3.33	12.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.05	15.87	-4.66	12.21	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.91	3.67	HS 73.45	132.2
HS20	18.19	6.12	HS 122.41	220.3
2F1	27.61	9.24	0.00	138.7
3F1	23.58	7.16	0.00	164.6
4F1	27.86	6.89	0.00	186.1
5C1	19.90	7.07	0.00	282.9

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. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

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. 184.0	178.5	-156.8	178.5	-156.8	151.3	-184.0	151.3	-
OPER 306.6	279.4	-279.4	279.4	-279.4	252.2	-306.6	252.2	-

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	103.37	79.51	R 204.98	0.0	81.03	62.33	176.98	
		-31.18	-23.98	L 134.63	0.0	-23.74	-18.26	157.85	0.00
OPER	HS20	103.37	79.51	R 204.98	0.0	81.03	62.33	176.98	
		-31.18	-23.98	L 134.63	0.0	-23.74	-18.26	157.85	0.00
OPER	2F1	71.28	54.83	R 186.98	0.0	0.00	0.00	0.00	
		-20.96	-16.12	L 150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.46	69.58	R 186.98	0.0	0.00	0.00	0.00	
		-30.07	-23.13	L 147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.53	74.25	R 190.98	0.0	0.00	0.00	0.00	
		-32.36	-24.89	L 144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.45	69.58	R 188.98	0.0	0.00	0.00	0.00	
		-28.31	-21.78	L 145.85	0.0	0.00	0.00	0.00	0.00

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	5.90	1.46	5.90	HS 29.28	52.7
HS20	2.44	9.84	2.44	9.84	HS 48.79	87.8
2F1	3.54	14.63	3.54	14.63	0.00	53.1
3F1	2.79	10.20	2.79	10.20	0.00	64.1
4F1	2.61	9.48	2.61	9.48	0.00	70.5

5C1	2.79	10.83	2.79	10.83	0.00	111.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.72	28.67	28.67	1.699	999999.000	93.215

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		6.18		108.0

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	11.96	1.00	33000.	73.86	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
2.6	32.1

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	159.6	-182.0	140.4	-201.2
OPER	300.6C	-268.7	268.7	-300.6C	266.0	-303.3	234.0	-335.3

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	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38			
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85		0.00	
OPER	HS20	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38			
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85		0.00	
OPER	2F1	76.34 R	58.72	189.38	0.0	0.00	0.00	0.00		0.00	
		-17.47 L	-13.44	150.24	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	103.45 L	79.57	169.38	0.0	0.00	0.00	0.00		0.00	
		-25.06 L	-19.28	147.85	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	110.49 R	84.99	193.38	0.0	0.00	0.00	0.00		0.00	
		-26.96 L	-20.74	144.63	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	98.72 R	75.94	230.38	0.0	0.00	0.00	0.00		0.00	
		-23.59 L	-18.15	145.85	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	1.40	7.01	1.24	7.74	HS 24.72	44.5
HS20	2.34	11.67	2.06	12.90	HS 41.20	74.2
2F1	3.48	17.36	3.07	19.19	0.00	46.0
3F1	2.57	12.10	2.26	13.38	0.00	52.0
4F1	2.41	11.25	2.12	12.43	0.00	57.2
5C1	2.69	12.86	2.37	14.21	0.00	94.8

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
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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	-9.50	15.37	-7.31	11.82	-8.87	13.95	-6.82	10.73
OPER	HS20	-9.50	15.37	-7.31	11.82	-8.87	13.95	-6.82	10.73
OPER	2F1	-6.27	9.69	-4.82	7.46	0.00	0.00	0.00	0.00
OPER	3F1	-7.72	12.78	-5.94	9.83	0.00	0.00	0.00	0.00
OPER	4F1	-7.00	12.69	-5.39	9.76	0.00	0.00	0.00	0.00
OPER	5C1	-8.24	13.24	-6.34	10.19	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.48	4.46	HS 89.21	160.6
HS20	12.47	7.43	HS 148.69	267.6
2F1	18.91	11.79	0.00	176.8
3F1	15.35	8.94	0.00	205.6
4F1	16.92	9.00	0.00	243.1
5C1	14.38	8.63	0.00	345.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.1

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. 188.4	181.5	-153.8	181.5	-153.8	146.9	-188.4	146.9	-
OPER 314.0	279.4	-279.4	279.4	-279.4	244.8	-314.0	244.8	-

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	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38	
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00
OPER	HS20	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38	
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00
OPER	2F1	76.34 R	58.72	189.38	0.0	0.00	0.00	0.00	
		-17.47 L	-13.44	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	103.45 L	79.57	169.38	0.0	0.00	0.00	0.00	
		-25.06 L	-19.28	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	110.49 R	84.99	193.38	0.0	0.00	0.00	0.00	
		-26.96 L	-20.74	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.72 R	75.94	230.38	0.0	0.00	0.00	0.00	
		-23.59 L	-18.15	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.29	7.25	1.29	7.25	HS 25.86	46.5
HS20	2.15	12.09	2.15	12.09	HS 43.10	77.6
2F1	3.21	17.98	3.21	17.98	0.00	48.1
3F1	2.37	12.53	2.37	12.53	0.00	54.4
4F1	2.21	11.65	2.21	11.65	0.00	59.8

5C1	2.48	13.31	2.48	13.31	0.00	99.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
2.8	34.4

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	158.1	-183.5	138.9	-202.7
OPER	300.6C	-268.7	268.7	-300.6C	263.5	-305.8	231.5	-337.8

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	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77			
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85		0.00	
OPER	HS20	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77			
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85		0.00	
OPER	2F1	80.34 L	61.80	171.77	0.0	0.00	0.00	0.00		0.00	
		-13.97 L	-10.75	150.24	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	106.14 L	81.65	171.77	0.0	0.00	0.00	0.00		0.00	
		-20.05 L	-15.42	147.85	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	113.24 L	87.11	167.77	0.0	0.00	0.00	0.00		0.00	
		-21.57 L	-16.59	144.63	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	101.57 R	78.13	228.77	0.0	0.00	0.00	0.00		0.00	
		-18.87 L	-14.52	145.85	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	1.34	8.83	1.18	9.75	HS 23.58	42.4
HS20	2.24	14.72	1.97	16.25	HS 39.30	70.7
2F1	3.28	21.89	2.88	24.18	0.00	43.2
3F1	2.48	15.26	2.18	16.85	0.00	50.2
4F1	2.33	14.18	2.04	15.66	0.00	55.2
5C1	2.59	16.21	2.28	17.90	0.00	91.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.600

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	-12.31	11.85	-9.47	9.12	-11.52	11.20	-8.86	8.62
OPER	HS20	-12.31	11.85	-9.47	9.12	-11.52	11.20	-8.86	8.62
OPER	2F1	-8.40	7.28	-6.46	5.60	0.00	0.00	0.00	0.00
OPER	3F1	-10.69	9.87	-8.22	7.59	0.00	0.00	0.00	0.00
OPER	4F1	-10.58	8.99	-8.14	6.91	0.00	0.00	0.00	0.00
OPER	5C1	-10.62	10.73	-8.17	8.26	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.67	5.89	HS 113.48	204.3
HS20	9.46	9.81	HS 189.14	340.5
2F1	13.87	15.97	0.00	208.0
3F1	10.90	11.78	0.00	250.6
4F1	11.01	12.94	0.00	297.3
5C1	10.97	10.84	0.00	433.5

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. 8.600 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
2.8 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. 189.9	182.5	-152.8	182.5	-152.8	145.3	-189.9	145.3	-
OPER 316.6	279.4	-279.4	279.4	-279.4	242.2	-316.6	242.2	-

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	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77	
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00
OPER	HS20	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77	
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00
OPER	2F1	80.34 L	61.80	171.77	0.0	0.00	0.00	0.00	
		-13.97 L	-10.75	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	106.14 L	81.65	171.77	0.0	0.00	0.00	0.00	
		-20.05 L	-15.42	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.24 L	87.11	167.77	0.0	0.00	0.00	0.00	
		-21.57 L	-16.59	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	101.57 R	78.13	228.77	0.0	0.00	0.00	0.00	
		-18.87 L	-14.52	145.85	0.0	0.00	0.00	0.00	0.00

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	9.14	1.23	9.14	HS 24.68	44.4
HS20	2.06	15.23	2.06	15.23	HS 41.13	74.0
2F1	3.02	22.66	3.02	22.66	0.00	45.2
3F1	2.28	15.79	2.28	15.79	0.00	52.5
4F1	2.14	14.68	2.14	14.68	0.00	57.8

5C1	2.38	16.77	2.38	16.77	0.00	95.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
2.6 32.4

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	159.4	-182.2	140.2	-201.4
OPER	300.6C	-268.7	268.7	-300.6C	265.7	-303.6	233.7	-335.6

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	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16			
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00		
OPER	HS20	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16			
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00		
OPER	2F1	76.94 L	59.18	174.16	0.0	0.00	0.00	0.00			
		-10.48 L	-8.06	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.40 L	77.23	170.16	0.0	0.00	0.00	0.00			
		-15.04 L	-11.57	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	103.93 L	79.95	170.16	0.0	0.00	0.00	0.00			
		-16.18 L	-12.44	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.36 L	74.90	168.16	0.0	0.00	0.00	0.00			
		-14.15 L	-10.89	145.85	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	1.35	11.69	1.19	12.92	HS 23.79	42.8
HS20	2.25	19.48	1.98	21.53	HS 39.64	71.4
2F1	3.45	28.97	3.04	32.03	0.00	45.6
3F1	2.65	20.19	2.33	22.32	0.00	53.5
4F1	2.56	18.77	2.25	20.75	0.00	60.7
5C1	2.73	21.45	2.40	23.71	0.00	96.0

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
-0.1	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	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	-16.43	8.87	-12.64	6.82	-14.43	8.45	-11.10	6.50
OPER	HS20	-16.43	8.87	-12.64	6.82	-14.43	8.45	-11.10	6.50
OPER	2F1	-10.72	5.54	-8.25	4.27	0.00	0.00	0.00	0.00
OPER	3F1	-13.99	6.83	-10.76	5.25	0.00	0.00	0.00	0.00
OPER	4F1	-13.81	5.62	-10.62	4.33	0.00	0.00	0.00	0.00
OPER	5C1	-13.57	8.09	-10.44	6.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.18	8.00	HS 83.60	150.5
HS20	6.97	13.33	HS 139.34	250.8
2F1	10.68	21.33	0.00	160.1
3F1	8.18	17.32	0.00	188.1
4F1	8.29	21.03	0.00	223.8
5C1	8.44	14.62	0.00	337.4

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. 8.700 2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.4

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. 188.6	181.6	-153.6	181.6	-153.6	146.7	-188.6	146.7	-
OPER 314.4	279.4	-279.4	279.4	-279.4	244.4	-314.4	244.4	-

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	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16	
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00
OPER	HS20	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16	
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00
OPER	2F1	76.94 L	59.18	174.16	0.0	0.00	0.00	0.00	
		-10.48 L	-8.06	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.40 L	77.23	170.16	0.0	0.00	0.00	0.00	
		-15.04 L	-11.57	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	103.93 L	79.95	170.16	0.0	0.00	0.00	0.00	
		-16.18 L	-12.44	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.36 L	74.90	168.16	0.0	0.00	0.00	0.00	
		-14.15 L	-10.89	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.24	12.10	1.24	12.10	HS 24.88	44.8
HS20	2.07	20.17	2.07	20.17	HS 41.47	74.6
2F1	3.18	30.00	3.18	30.00	0.00	47.7
3F1	2.43	20.91	2.43	20.91	0.00	56.0
4F1	2.35	19.43	2.35	19.43	0.00	63.5

5C1	2.51	22.21	2.51	22.21	0.00	100.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 2.1
Superimposed Dead Load Moment 26.0

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	163.6	-178.0	144.4	-197.2
OPER	300.6C	-268.7	268.7	-300.6C	272.6	-296.7	240.6	-328.7

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	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55			
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00		
OPER	HS20	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55			
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00		
OPER	2F1	63.17 L	48.59	176.55	0.0	0.00	0.00	0.00			
		-6.99 L	-5.37	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.09 L	64.69	172.55	0.0	0.00	0.00	0.00			
		-10.02 L	-7.71	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.73 L	64.41	168.55	0.0	0.00	0.00	0.00			
		-10.79 L	-8.30	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.56 L	62.74	170.55	0.0	0.00	0.00	0.00			
		-9.44 L	-7.26	145.85	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	17.13	1.44	18.98	HS 28.74	51.7
HS20	2.71	28.55	2.39	31.63	HS 47.90	86.2
2F1	4.32	42.47	3.81	47.04	0.00	57.1
3F1	3.24	29.60	2.86	32.79	0.00	65.8
4F1	3.26	27.51	2.87	30.48	0.00	77.6
5C1	3.34	31.44	2.95	34.83	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.	8.800		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	-112.5	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	-21.00	5.98	-16.15	4.60	-17.56	5.74	-13.51	4.42
OPER	HS20	-21.00	5.98	-16.15	4.60	-17.56	5.74	-13.51	4.42
OPER	2F1	-13.21	3.74	-10.16	2.87	0.00	0.00	0.00	0.00
OPER	3F1	-17.58	3.70	-13.52	2.85	0.00	0.00	0.00	0.00
OPER	4F1	-17.51	3.05	-13.47	2.34	0.00	0.00	0.00	0.00
OPER	5C1	-17.05	5.30	-13.12	4.08	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.21	12.07	HS 64.28	115.7
HS20	5.36	20.12	HS 107.13	192.8
2F1	8.52	32.19	0.00	127.8
3F1	6.40	32.51	0.00	147.2
4F1	6.43	39.47	0.00	173.5
5C1	6.60	22.69	0.00	263.9

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. 8.800 2F1
3F1
4F1
5C1

Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

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. 184.5	178.9	-156.4	178.9	-156.4	150.8	-184.5	150.8	-
OPER 307.5	279.4	-279.4	279.4	-279.4	251.3	-307.5	251.3	-

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	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55	
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00
OPER	HS20	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55	
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00
OPER	2F1	63.17 L	48.59	176.55	0.0	0.00	0.00	0.00	
		-6.99 L	-5.37	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.09 L	64.69	172.55	0.0	0.00	0.00	0.00	
		-10.02 L	-7.71	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.73 L	64.41	168.55	0.0	0.00	0.00	0.00	
		-10.79 L	-8.30	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.56 L	62.74	170.55	0.0	0.00	0.00	0.00	
		-9.44 L	-7.26	145.85	0.0	0.00	0.00	0.00	0.00

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	17.75	1.50	17.75	HS 30.03	54.0
HS20	2.50	29.59	2.50	29.59	HS 50.04	90.1
2F1	3.98	44.01	3.98	44.01	0.00	59.7
3F1	2.99	30.67	2.99	30.67	0.00	68.7
4F1	3.00	28.51	3.00	28.51	0.00	81.0

5C1

3.08

32.58

3.08

32.58

0.00

123.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 1.2
Superimposed Dead Load Moment 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	170.5	-171.0	151.4	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.0	252.3	-317.0

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94		
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00	
OPER	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94		
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00	
OPER	2F1	37.81 L	29.09	178.94	0.0	0.00	0.00	0.00		
		-3.49 L	-2.69	150.24	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	51.17 L	39.36	174.94	0.0	0.00	0.00	0.00		
		-5.01 L	-3.86	147.85	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	51.90 L	39.92	170.94	0.0	0.00	0.00	0.00		
		-5.39 L	-4.15	144.63	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	49.68 L	38.22	172.94	0.0	0.00	0.00	0.00		
		-4.72 L	-3.63	145.85	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	2.75	32.92	2.44	36.61	HS 48.78	87.8
HS20	4.58	54.86	4.07	61.01	HS 81.30	146.3
2F1	7.52	81.60	6.67	90.75	0.00	100.1
3F1	5.55	56.88	4.93	63.26	0.00	113.4
4F1	5.48	52.86	4.86	58.79	0.00	131.2
5C1	5.72	60.42	5.08	67.20	0.00	203.1

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.	8.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.4	-5.4	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	-25.95	3.01	-19.96	2.31	-20.89	3.12	-16.07	2.40
OPER	HS20	-25.95	3.01	-19.96	2.31	-20.89	3.12	-16.07	2.40
OPER	2F1	-15.81	1.88	-12.16	1.45	0.00	0.00	0.00	0.00
OPER	3F1	-21.40	2.10	-16.46	1.61	0.00	0.00	0.00	0.00
OPER	4F1	-21.70	2.24	-16.69	1.72	0.00	0.00	0.00	0.00
OPER	5C1	-20.77	3.43	-15.98	2.64	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.56	23.53	HS 51.11	92.0
HS20	4.26	39.22	HS 85.18	153.3
2F1	6.99	65.02	0.00	104.8
3F1	5.16	58.33	0.00	118.8
4F1	5.09	54.56	0.00	137.5
5C1	5.32	35.62	0.00	212.8

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. 8.900 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
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	-
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

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	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94	
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00
OPER	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94	
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00
OPER	2F1	37.81 L	29.09	178.94	0.0	0.00	0.00	0.00	0.00
		-3.49 L	-2.69	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.17 L	39.36	174.94	0.0	0.00	0.00	0.00	0.00
		-5.01 L	-3.86	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	51.90 L	39.92	170.94	0.0	0.00	0.00	0.00	0.00
		-5.39 L	-4.15	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	49.68 L	38.22	172.94	0.0	0.00	0.00	0.00	0.00
		-4.72 L	-3.63	145.85	0.0	0.00	0.00	0.00	0.00

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	34.16	2.54	34.16	HS 50.86	91.5
HS20	4.24	56.93	4.24	56.93	HS 84.76	152.6
2F1	6.96	84.67	6.96	84.67	0.00	104.3
3F1	5.14	59.02	5.14	59.02	0.00	118.2
4F1	5.07	54.85	5.07	54.85	0.00	136.8

5C1	5.29	62.69	5.29	62.69	0.00	211.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-7.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.1	70.2
OPER	151.3	-108.5	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	-31.19	0.00	-24.00	0.00	-24.40	2.12	-18.77	1.63
OPER	HS20	-31.19	0.00	-24.00	0.00	-24.40	2.12	-18.77	1.63
OPER	2F1	-18.50	0.00	-14.23	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-25.38	0.00	-19.53	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.15	0.00	-20.12	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-24.68	0.00	-18.98	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.09	33.07	HS 41.75	75.1
HS20	3.48	55.12	HS 69.58	125.2
2F1	5.87	999.00	0.00	88.0
3F1	4.28	999.00	0.00	98.3
4F1	4.15	999.00	0.00	112.0
5C1	4.40	999.00	0.00	175.9

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 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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 8

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	
	23.917	23.917	23.917	23.917	23.917	
	Span 6	Span 7	Span 8	Span 9	Span 10	
	23.917	23.917	23.917	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	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	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	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	23.917	0.0
8	P	11.958	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 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. 1.000

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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
0.6	0.0	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.3	-122.8	109.9

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	-2.32	34.71	-1.78	26.70	-2.36	27.16	-1.82	20.89
OPER	HS20	-2.32	34.71	-1.78	26.70	-2.36	27.16	-1.82	20.89
OPER	2F1	-1.63	20.59	-1.25	15.84	0.00	0.00	0.00	0.00
OPER	3F1	-2.33	28.25	-1.79	21.73	0.00	0.00	0.00	0.00
OPER	4F1	-2.49	29.10	-1.92	22.39	0.00	0.00	0.00	0.00
OPER	5C1	-2.20	27.46	-1.69	21.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.20	1.90	HS 38.00	68.4
HS20	52.01	3.17	HS 63.33	114.0
2F1	75.56	5.34	0.00	80.1
3F1	52.67	3.89	0.00	89.5
4F1	49.26	3.78	0.00	102.0
5C1	55.95	4.00	0.00	160.1

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	-
INV. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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. 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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.100

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.100 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

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	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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39		
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00	
OPER	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39		
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00	
OPER	2F1	42.08 R	32.37	12.39	0.0	0.00	0.00	0.00	0.00	0.00
		-3.89 R	-2.99	41.09	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	56.95 R	43.80	16.39	0.0	0.00	0.00	0.00	0.00	0.00
		-5.58 R	-4.29	43.48	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	57.76 R	44.43	20.39	0.0	0.00	0.00	0.00	0.00	0.00
		-6.00 R	-4.62	46.70	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	55.29 R	42.53	18.39	0.0	0.00	0.00	0.00	0.00	0.00
		-5.25 R	-4.04	45.48	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	29.27	2.22	32.59	HS 44.34	79.8
HS20	4.16	48.79	3.69	54.32	HS 73.90	133.0
2F1	6.82	72.57	6.06	80.80	0.00	91.0
3F1	5.04	50.59	4.48	56.32	0.00	103.1
4F1	4.97	47.01	4.42	52.34	0.00	119.3
5C1	5.19	53.74	4.61	59.83	0.00	184.6

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.	1.100		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	66.9
OPER	151.3	-121.2	111.5

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	-3.35	28.88	-2.58	22.21	-3.47	23.25	-2.67	17.88
OPER	HS20	-3.35	28.88	-2.58	22.21	-3.47	23.25	-2.67	17.88
OPER	2F1	-2.09	17.59	-1.61	13.53	0.00	0.00	0.00	0.00
OPER	3F1	-2.33	23.81	-1.79	18.32	0.00	0.00	0.00	0.00
OPER	4F1	-2.49	24.15	-1.92	18.58	0.00	0.00	0.00	0.00
OPER	5C1	-3.82	23.12	-2.94	17.78	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.97	2.32	HS 46.36	83.4
HS20	34.94	3.86	HS 77.26	139.1
2F1	57.93	6.34	0.00	95.1
3F1	51.97	4.68	0.00	107.7
4F1	48.62	4.62	0.00	124.7
5C1	31.74	4.82	0.00	193.0

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 1.2
Superimposed Dead Load Moment 12.3

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. 175.7	173.0	-162.2	173.0	-162.2	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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39	
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00
OPER	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39	
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00
OPER	2F1	42.08 R	32.37	12.39	0.0	0.00	0.00	0.00	0.00
		-3.89 R	-2.99	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.95 R	43.80	16.39	0.0	0.00	0.00	0.00	0.00
		-5.58 R	-4.29	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	57.76 R	44.43	20.39	0.0	0.00	0.00	0.00	0.00
		-6.00 R	-4.62	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.29 R	42.53	18.39	0.0	0.00	0.00	0.00	0.00
		-5.25 R	-4.04	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.31	30.39	2.31	30.39	HS 46.21	83.2
HS20	3.85	50.65	3.85	50.65	HS 77.01	138.6
2F1	6.32	75.34	6.32	75.34	0.00	94.8
3F1	4.67	52.51	4.67	52.51	0.00	107.4
4F1	4.60	48.80	4.60	48.80	0.00	124.3

5C1 4.81 55.78 4.81 55.78 0.00 192.4

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.200

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.1
Superimposed Dead Load Moment 21.0

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	166.5	-175.0	147.3	-194.2
OPER	300.6C	-268.7	268.7	-300.6C	277.5	-291.7	245.6	-323.7

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	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78			
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00		
OPER	HS20	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78			
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00		
OPER	2F1	70.29 R	54.07	14.78	0.0	0.00	0.00	0.00			
		-7.78 R	-5.98	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.58 R	71.99	18.78	0.0	0.00	0.00	0.00			
		-11.15 R	-8.58	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.18 R	71.68	22.78	0.0	0.00	0.00	0.00			
		-12.00 R	-9.23	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.77 R	69.82	20.78	0.0	0.00	0.00	0.00			
		-10.50 R	-8.08	45.48	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	1.49	15.14	1.32	16.80	HS 26.36	47.4
HS20	2.48	25.23	2.20	27.99	HS 43.93	79.1
2F1	3.95	37.52	3.49	41.64	0.00	52.4
3F1	2.97	26.16	2.62	29.02	0.00	60.4
4F1	2.98	24.31	2.63	26.97	0.00	71.2
5C1	3.06	27.78	2.70	30.83	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.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	2.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.6	113.2

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	-6.65	23.37	-5.12	17.98	-6.39	19.54	-4.92	15.03
OPER	HS20	-6.65	23.37	-5.12	17.98	-6.39	19.54	-4.92	15.03
OPER	2F1	-4.16	14.70	-3.20	11.30	0.00	0.00	0.00	0.00
OPER	3F1	-4.12	19.56	-3.17	15.05	0.00	0.00	0.00	0.00
OPER	4F1	-3.39	19.48	-2.61	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-5.90	18.98	-4.54	14.60	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	2.90	HS 58.11	104.6
HS20	17.98	4.84	HS 96.84	174.3
2F1	28.76	7.70	0.00	115.5
3F1	29.05	5.78	0.00	133.0
4F1	35.27	5.81	0.00	156.8
5C1	20.27	5.96	0.00	238.5

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. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.1
Superimposed Dead Load Moment 21.0

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. 181.5	176.9	-158.4	176.9	-158.4	153.8	-181.5	153.8	-
OPER 302.5	279.4	-279.4	279.4	-279.4	256.3	-302.5	256.3	-

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	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78	
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00
OPER	HS20	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78	
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00
OPER	2F1	70.29 R	54.07	14.78	0.0	0.00	0.00	0.00	
		-7.78 R	-5.98	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.58 R	71.99	18.78	0.0	0.00	0.00	0.00	
		-11.15 R	-8.58	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.18 R	71.68	22.78	0.0	0.00	0.00	0.00	
		-12.00 R	-9.23	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.77 R	69.82	20.78	0.0	0.00	0.00	0.00	
		-10.50 R	-8.08	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.38	15.69	1.38	15.69	HS 27.51	49.5
HS20	2.29	26.16	2.29	26.16	HS 45.86	82.5
2F1	3.65	38.90	3.65	38.90	0.00	54.7
3F1	2.74	27.12	2.74	27.12	0.00	63.0
4F1	2.75	25.20	2.75	25.20	0.00	74.3

5C1	2.82	28.81	2.82	28.81	0.00	112.9
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.300

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.300 2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.2

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	163.1	-178.5	143.9	-197.7
OPER	300.6C	-268.7	268.7	-300.6C	271.8	-297.5	239.8	-329.5

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	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18			
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00		
OPER	HS20	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18			
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00		
OPER	2F1	85.62 R	65.86	17.18	0.0	0.00	0.00	0.00			
		-11.66 R	-8.97	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.73 R	85.95	21.18	0.0	0.00	0.00	0.00			
		-16.73 R	-12.87	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	115.66 R	88.97	21.18	0.0	0.00	0.00	0.00			
		-18.00 R	-13.85	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	108.35 R	83.35	23.18	0.0	0.00	0.00	0.00			
		-15.75 R	-12.12	45.48	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	1.24	10.29	1.10	11.40	HS 21.94	39.5
HS20	2.07	17.15	1.83	18.99	HS 36.56	65.8
2F1	3.17	25.51	2.80	28.25	0.00	42.0
3F1	2.43	17.78	2.15	19.69	0.00	49.4
4F1	2.35	16.52	2.07	18.30	0.00	56.0
5C1	2.51	18.89	2.21	20.92	0.00	88.5

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.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1	0.0	1.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.8	68.9
OPER	151.3	-118.0	114.8

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	-9.87	18.28	-7.59	14.06	-9.40	16.05	-7.23	12.35
OPER	HS20	-9.87	18.28	-7.59	14.06	-9.40	16.05	-7.23	12.35
OPER	2F1	-6.17	11.93	-4.75	9.18	0.00	0.00	0.00	0.00
OPER	3F1	-7.60	15.57	-5.84	11.98	0.00	0.00	0.00	0.00
OPER	4F1	-6.26	15.37	-4.81	11.82	0.00	0.00	0.00	0.00
OPER	5C1	-9.00	15.10	-6.92	11.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.17	3.77	HS 75.33	135.6
HS20	11.95	6.28	HS 125.55	226.0
2F1	19.12	9.62	0.00	144.3
3F1	15.52	7.37	0.00	169.5
4F1	18.85	7.47	0.00	201.7
5C1	13.10	7.60	0.00	304.0

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 2.6
Superimposed Dead Load Moment 26.2

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. 184.9	179.2	-156.1	179.2	-156.1	150.3	-184.9	150.3	-
OPER 308.2	279.4	-279.4	279.4	-279.4	250.6	-308.2	250.6	-

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	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18	
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00
OPER	HS20	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18	
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00
OPER	2F1	85.62 R	65.86	17.18	0.0	0.00	0.00	0.00	
		-11.66 R	-8.97	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.73 R	85.95	21.18	0.0	0.00	0.00	0.00	
		-16.73 R	-12.87	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	115.66 R	88.97	21.18	0.0	0.00	0.00	0.00	
		-18.00 R	-13.85	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	108.35 R	83.35	23.18	0.0	0.00	0.00	0.00	
		-15.75 R	-12.12	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.15	10.66	1.15	10.66	HS 22.92	41.3
HS20	1.91	17.77	1.91	17.77	HS 38.20	68.8
2F1	2.93	26.43	2.93	26.43	0.00	43.9
3F1	2.24	18.42	2.24	18.42	0.00	51.6
4F1	2.17	17.12	2.17	17.12	0.00	58.5

5C1	2.31	19.57	2.31	19.57	0.00	92.5
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.400

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.400 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 27.9

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	162.0	-179.6	142.8	-198.8
OPER	300.6C	-268.7	268.7	-300.6C	270.0	-299.3	238.0	-331.3

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57		
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00	
OPER	HS20	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57		
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00	
OPER	2F1	89.41 R	68.77	19.57	0.0	0.00	0.00	0.00		
		-15.55 R	-11.96	41.09	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	118.12 R	90.86	19.57	0.0	0.00	0.00	0.00		
		-22.31 R	-17.16	43.48	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	126.02 R	96.94	23.57	0.0	0.00	0.00	0.00		
		-24.01 R	-18.47	46.70	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	113.03 L	86.95	-37.43	0.0	0.00	0.00	0.00		
		-21.00 R	-16.16	45.48	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	1.24	7.76	1.09	8.60	HS 21.78	39.2
HS20	2.06	12.94	1.82	14.32	HS 36.31	65.4
2F1	3.02	19.25	2.66	21.31	0.00	39.9
3F1	2.29	13.42	2.02	14.85	0.00	46.3
4F1	2.14	12.47	1.89	13.80	0.00	51.0
5C1	2.39	14.25	2.11	15.78	0.00	84.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.400

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.	90.8	-69.8	69.8
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	-13.19	13.70	-10.15	10.54	-12.46	12.82	-9.59	9.86
OPER	HS20	-13.19	13.70	-10.15	10.54	-12.46	12.82	-9.59	9.86
OPER	2F1	-8.10	9.35	-6.23	7.19	0.00	0.00	0.00	0.00
OPER	3F1	-10.98	11.89	-8.45	9.15	0.00	0.00	0.00	0.00
OPER	4F1	-10.00	11.77	-7.70	9.05	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	11.82	-9.40	9.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.29	5.10	HS 101.94	183.5
HS20	8.82	8.49	HS 169.90	305.8
2F1	14.36	12.45	0.00	186.8
3F1	10.59	9.79	0.00	225.1
4F1	11.63	9.89	0.00	267.0
5C1	9.52	9.85	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. 1.400 2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 27.9

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. 186.1	179.9	-155.4	179.9	-155.4	149.2	-186.1	149.2	-
OPER 310.1	279.4	-279.4	279.4	-279.4	248.7	-310.1	248.7	-

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	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57	
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00
OPER	HS20	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57	
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00
OPER	2F1	89.41 R	68.77	19.57	0.0	0.00	0.00	0.00	
		-15.55 R	-11.96	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	118.12 R	90.86	19.57	0.0	0.00	0.00	0.00	
		-22.31 R	-17.16	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.02 R	96.94	23.57	0.0	0.00	0.00	0.00	
		-24.01 R	-18.47	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	113.03 L	86.95	-37.43	0.0	0.00	0.00	0.00	
		-21.00 R	-16.16	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.14	8.04	1.14	8.04	HS 22.77	41.0
HS20	1.90	13.41	1.90	13.41	HS 37.95	68.3
2F1	2.78	19.94	2.78	19.94	0.00	41.7
3F1	2.11	13.90	2.11	13.90	0.00	48.4
4F1	1.97	12.92	1.97	12.92	0.00	53.3

5C1	2.20	14.77	2.20	14.77	0.00	88.0
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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 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. 1.500

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.500 2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.1

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	163.2	-178.4	144.0	-197.6
OPER	300.6C	-268.7	268.7	-300.6C	272.0	-297.3	240.0	-329.3

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	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96			
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00		
OPER	HS20	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96			
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00		
OPER	2F1	84.95 L	65.35	1.96	0.0	0.00	0.00	0.00			
		-19.44 R	-14.95	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.12 R	88.55	21.96	0.0	0.00	0.00	0.00			
		-27.89 R	-21.45	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	122.96 L	94.59	-2.04	0.0	0.00	0.00	0.00			
		-30.01 R	-23.08	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.86 L	84.51	-39.04	0.0	0.00	0.00	0.00			
		-26.25 R	-20.19	45.48	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	1.29	6.17	1.14	6.83	HS 22.78	41.0
HS20	2.15	10.28	1.90	11.39	HS 37.97	68.3
2F1	3.20	15.30	2.83	16.94	0.00	42.4
3F1	2.36	10.66	2.09	11.81	0.00	47.9
4F1	2.21	9.91	1.95	10.97	0.00	52.7
5C1	2.48	11.33	2.18	12.54	0.00	87.4

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
-0.2	-1.5	0.1

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	-17.10	10.57	-13.16	8.13	-15.53	9.87	-11.95	7.59
OPER	HS20	-17.10	10.57	-13.16	8.13	-15.53	9.87	-11.95	7.59
OPER	2F1	-10.79	6.97	-8.30	5.36	0.00	0.00	0.00	0.00
OPER	3F1	-14.22	8.59	-10.94	6.61	0.00	0.00	0.00	0.00
OPER	4F1	-14.12	7.79	-10.87	6.00	0.00	0.00	0.00	0.00
OPER	5C1	-14.74	9.17	-11.34	7.05	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.03	6.70	HS 80.50	144.9
HS20	6.71	11.16	HS 134.17	241.5
2F1	10.64	16.92	0.00	159.6
3F1	8.07	13.74	0.00	185.6
4F1	8.12	15.14	0.00	219.3
5C1	7.79	12.87	0.00	311.4

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. 1.500 2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.1

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. 184.8	179.1	-156.2	179.1	-156.2	150.4	-184.8	150.4	-
OPER 308.1	279.4	-279.4	279.4	-279.4	250.7	-308.1	250.7	-

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	126.40	97.23	L -16.04	0.0	101.45	78.03	11.96	
		-28.91	-22.24	R 56.70	0.0	-22.01	-16.93	33.48	0.00
OPER	HS20	126.40	97.23	L -16.04	0.0	101.45	78.03	11.96	
		-28.91	-22.24	R 56.70	0.0	-22.01	-16.93	33.48	0.00
OPER	2F1	84.95	65.35	L 1.96	0.0	0.00	0.00	0.00	
		-19.44	-14.95	R 41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.12	88.55	R 21.96	0.0	0.00	0.00	0.00	
		-27.89	-21.45	R 43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	122.96	94.59	L -2.04	0.0	0.00	0.00	0.00	
		-30.01	-23.08	R 46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.86	84.51	L -39.04	0.0	0.00	0.00	0.00	
		-26.25	-20.19	R 45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.19	6.39	1.19	6.39	HS 23.80	42.8
HS20	1.98	10.66	1.98	10.66	HS 39.67	71.4
2F1	2.95	15.85	2.95	15.85	0.00	44.3
3F1	2.18	11.05	2.18	11.05	0.00	50.1
4F1	2.04	10.27	2.04	10.27	0.00	55.1

5C1	2.28	11.73	2.28	11.73	0.00	91.3
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.600

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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. 1.600 2F1
3F1
4F1
5C1

Dead Load Moment 2.0
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.	180.4C	-161.2	161.2	-180.4C	166.9	-174.7	147.7	-193.9
OPER	300.6C	-268.7	268.7	-300.6C	278.2	-291.1	246.2	-323.1

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	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35			
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00		
OPER	HS20	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35			
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00		
OPER	2F1	79.32 L	61.01	4.35	0.0	0.00	0.00	0.00			
		-23.33 R	-17.94	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.67 L	77.44	4.35	0.0	0.00	0.00	0.00			
		-33.46 R	-25.74	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.42 L	82.63	0.35	0.0	0.00	0.00	0.00			
		-36.01 R	-27.70	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	100.66 L	77.43	2.35	0.0	0.00	0.00	0.00			
		-31.50 R	-24.23	45.48	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	1.45	5.03	1.28	5.59	HS 25.68	46.2
HS20	2.42	8.39	2.14	9.31	HS 42.80	77.0
2F1	3.51	12.48	3.10	13.85	0.00	46.6
3F1	2.76	8.70	2.44	9.66	0.00	56.2
4F1	2.59	8.09	2.29	8.97	0.00	61.9
5C1	2.76	9.24	2.45	10.26	0.00	97.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

1.600

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	-20.41	7.37	-15.70	5.67	-18.56	7.23	-14.27	5.56
OPER	HS20	-20.41	7.37	-15.70	5.67	-18.56	7.23	-14.27	5.56
OPER	2F1	-13.51	4.85	-10.40	3.73	0.00	0.00	0.00	0.00
OPER	3F1	-17.46	5.68	-13.43	4.37	0.00	0.00	0.00	0.00
OPER	4F1	-18.13	4.81	-13.95	3.70	0.00	0.00	0.00	0.00
OPER	5C1	-17.66	6.74	-13.59	5.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	9.75	HS 66.41	119.5
HS20	5.53	16.25	HS 110.68	199.2
2F1	8.36	24.67	0.00	125.4
3F1	6.47	21.07	0.00	148.8
4F1	6.23	24.89	0.00	168.2
5C1	6.39	17.78	0.00	255.8

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. 1.600 2F1
3F1
4F1
5C1

Dead Load Moment 2.0
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. 181.1	176.6	-158.7	176.6	-158.7	154.2	-181.1	154.2	-
OPER 301.9	279.4	-279.4	279.4	-279.4	256.9	-301.9	256.9	-

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	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35	
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00
OPER	HS20	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35	
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00
OPER	2F1	79.32 L	61.01	4.35	0.0	0.00	0.00	0.00	
		-23.33 R	-17.94	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.67 L	77.44	4.35	0.0	0.00	0.00	0.00	
		-33.46 R	-25.74	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.42 L	82.63	0.35	0.0	0.00	0.00	0.00	
		-36.01 R	-27.70	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	100.66 L	77.43	2.35	0.0	0.00	0.00	0.00	
		-31.50 R	-24.23	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.34	5.22	1.34	5.22	HS 26.80	48.2
HS20	2.23	8.70	2.23	8.70	HS 44.67	80.4
2F1	3.24	12.94	3.24	12.94	0.00	48.6
3F1	2.55	9.02	2.55	9.02	0.00	58.7
4F1	2.39	8.38	2.39	8.38	0.00	64.6

5C1 2.55 9.58 2.55 9.58 0.00 102.1

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.700

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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. 1.700 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

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	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.1	256.3	-313.0

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	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74			
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32		
OPER	HS20	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74			
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32		
OPER	2F1	63.71 L	49.01	6.74	0.0	0.00	0.00	0.00			
		-27.21 R	-20.93	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.13 L	62.41	2.74	0.0	0.00	0.00	0.00			
		-39.04 R	-30.03	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.23 L	63.25	2.74	0.0	0.00	0.00	0.00			
		-42.01 R	-32.32	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.63 R	64.33	63.74	0.0	0.00	0.00	0.00			
		-36.75 R	-28.27	45.48	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	4.17	1.55	4.64	HS 31.09	56.0
HS20	2.91	6.94	2.59	7.73	HS 51.82	93.3
2F1	4.52	10.33	4.02	11.50	0.00	60.3
3F1	3.55	7.20	3.16	8.02	0.00	72.6
4F1	3.51	6.69	3.12	7.45	0.00	84.1
5C1	3.45	7.65	3.06	8.52	0.00	122.6

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.	1.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.6	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.3	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	-25.37	3.32	-19.52	2.55	-21.50	4.92	-16.54	3.79
OPER	HS20	-25.37	3.32	-19.52	2.55	-21.50	4.92	-16.54	3.79
OPER	2F1	-16.06	3.02	-12.35	2.32	0.00	0.00	0.00	0.00
OPER	3F1	-21.53	3.21	-16.56	2.47	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.34	-17.06	1.80	0.00	0.00	0.00	0.00
OPER	5C1	-20.73	4.51	-15.94	3.47	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.63	14.80	HS 52.66	94.8
HS20	4.39	24.67	HS 87.77	158.0
2F1	6.93	40.17	0.00	104.0
3F1	5.17	37.78	0.00	118.9
4F1	5.02	51.79	0.00	135.5
5C1	5.37	26.91	0.00	214.9

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 1.1
Superimposed Dead Load Moment 11.3

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. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

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	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74	
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32
OPER	HS20	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74	
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32
OPER	2F1	63.71 L	49.01	6.74	0.0	0.00	0.00	0.00	
		-27.21 R	-20.93	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.13 L	62.41	2.74	0.0	0.00	0.00	0.00	
		-39.04 R	-30.03	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.23 L	63.25	2.74	0.0	0.00	0.00	0.00	
		-42.01 R	-32.32	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.63 R	64.33	63.74	0.0	0.00	0.00	0.00	
		-36.75 R	-28.27	45.48	0.0	0.00	0.00	0.00	0.00

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	4.32	1.62	4.32	HS 32.39	58.3
HS20	2.70	7.21	2.70	7.21	HS 53.99	97.2
2F1	4.19	10.72	4.19	10.72	0.00	62.9
3F1	3.29	7.47	3.29	7.47	0.00	75.7
4F1	3.25	6.95	3.25	6.95	0.00	87.7

5C1	3.19	7.94	3.19	7.94	0.00	127.7
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.800

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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. 1.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -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.	180.4C	-161.2	161.2	-180.4C	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

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	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13			
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32		
OPER	HS20	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13			
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32		
OPER	2F1	40.21 L	30.93	9.13	0.0	0.00	0.00	0.00	0.00		
		-31.10 R	-23.92	41.09	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	48.36 L	37.20	5.13	0.0	0.00	0.00	0.00	0.00		
		-44.62 R	-34.32	43.48	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.16 L	33.97	1.13	0.0	0.00	0.00	0.00	0.00		
		-48.01 R	-36.93	46.70	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.23 R	44.79	66.13	0.0	0.00	0.00	0.00	0.00		
		-42.00 R	-32.31	45.48	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	2.94	3.46	2.63	3.88	HS 52.56	94.6
HS20	4.90	5.77	4.38	6.47	HS 87.60	157.7
2F1	7.52	8.59	6.72	9.62	0.00	100.8
3F1	6.25	5.99	5.59	6.70	0.00	128.5
4F1	6.84	5.56	6.12	6.23	0.00	150.2
5C1	5.19	6.36	4.64	7.12	0.00	185.6

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
-0.6	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.8
OPER	151.3	-109.7	123.0

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	-30.85	1.15	-23.73	0.88	-24.31	2.96	-18.70	2.28
OPER	HS20	-30.85	1.15	-23.73	0.88	-24.31	2.96	-18.70	2.28
OPER	2F1	-18.38	1.49	-14.14	1.14	0.00	0.00	0.00	0.00
OPER	3F1	-25.31	1.20	-19.47	0.92	0.00	0.00	0.00	0.00
OPER	4F1	-25.80	0.67	-19.85	0.51	0.00	0.00	0.00	0.00
OPER	5C1	-23.87	2.56	-18.36	1.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.13	24.92	HS 42.68	76.8
HS20	3.56	41.53	HS 71.14	128.0
2F1	5.97	82.67	0.00	89.5
3F1	4.34	102.65	0.00	99.7
4F1	4.25	184.15	0.00	114.8
5C1	4.60	48.03	0.00	183.9

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. 1.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -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. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

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	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13	
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32
OPER	HS20	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13	
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32
OPER	2F1	40.21 L	30.93	9.13	0.0	0.00	0.00	0.00	
		-31.10 R	-23.92	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	48.36 L	37.20	5.13	0.0	0.00	0.00	0.00	
		-44.62 R	-34.32	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.16 L	33.97	1.13	0.0	0.00	0.00	0.00	
		-48.01 R	-36.93	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.23 R	44.79	66.13	0.0	0.00	0.00	0.00	
		-42.00 R	-32.31	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.60	2.73	3.60	HS 54.65	98.4
HS20	4.55	6.01	4.55	6.01	HS 91.08	163.9
2F1	6.99	8.93	6.99	8.93	0.00	104.8
3F1	5.81	6.23	5.81	6.23	0.00	133.6
4F1	6.36	5.79	6.36	5.79	0.00	156.3

5C1	4.82	6.61	4.82	6.61	0.00	193.0
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.900

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.8
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.	180.4C	-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	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53			
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57		
OPER	HS20	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53			
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57		
OPER	2F1	11.27 L	8.67	11.53	0.0	0.00	0.00	0.00			
		-34.99 R	-26.91	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 R	10.35	67.40	0.0	0.00	0.00	0.00			
		-50.20 R	-38.61	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.30 R	11.00	71.40	0.0	0.00	0.00	0.00			
		-54.01 R	-41.55	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	26.43 R	20.33	68.53	0.0	0.00	0.00	0.00			
		-48.78 L	-37.53	-11.12	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	8.38	2.47	7.54	2.79	HS 49.50	89.1
HS20	13.97	4.12	12.57	4.65	HS 82.49	148.5
2F1	28.40	7.12	25.56	8.04	0.00	106.9
3F1	23.79	4.97	21.41	5.60	0.00	114.2
4F1	22.38	4.61	20.14	5.21	0.00	124.6
5C1	12.11	5.11	10.90	5.77	0.00	204.4

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.	1.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.8	-7.5	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	-35.84	0.62	-27.57	0.48	-26.94	1.38	-20.72	1.06
OPER	HS20	-35.84	0.62	-27.57	0.48	-26.94	1.38	-20.72	1.06
OPER	2F1	-20.44	0.44	-15.72	0.34	0.00	0.00	0.00	0.00
OPER	3F1	-28.72	0.62	-22.10	0.48	0.00	0.00	0.00	0.00
OPER	4F1	-30.04	0.67	-23.11	0.51	0.00	0.00	0.00	0.00
OPER	5C1	-27.19	0.94	-20.92	0.73	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.81	54.28	HS 36.20	65.2
HS20	3.02	90.47	HS 60.33	108.6
2F1	5.29	286.15	0.00	79.3
3F1	3.76	199.46	0.00	86.6
4F1	3.60	186.57	0.00	97.2
5C1	3.98	132.05	0.00	159.0

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. 1.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.8 -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. 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	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53	
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57
OPER	HS20	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53	
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57
OPER	2F1	11.27 L	8.67	11.53	0.0	0.00	0.00	0.00	
		-34.99 R	-26.91	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.35	67.40	0.0	0.00	0.00	0.00	
		-50.20 R	-38.61	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.30 R	11.00	71.40	0.0	0.00	0.00	0.00	
		-54.01 R	-41.55	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.43 R	20.33	68.53	0.0	0.00	0.00	0.00	
		-48.78 L	-37.53	-11.12	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.82	2.58	7.82	2.58	HS 51.63	92.9
HS20	13.04	4.30	13.04	4.30	HS 86.05	154.9
2F1	26.51	7.43	26.51	7.43	0.00	111.5
3F1	22.21	5.18	22.21	5.18	0.00	119.1
4F1	20.89	4.81	20.89	4.81	0.00	130.0

5C1 11.31 5.33 11.31 5.33 0.00 213.2

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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-3.8	-37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00			
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00			
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00			
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00			
		-81.29 R	-62.53	28.74	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	13.23	1.22	11.99	1.39	HS 24.32	43.8
HS20	22.05	2.03	19.99	2.31	HS 40.53	73.0
2F1	32.80	4.42	29.73	5.04	0.00	66.3
3F1	22.86	2.96	20.73	3.38	0.00	68.2
4F1	21.25	2.48	19.26	2.83	0.00	66.9
5C1	26.25	2.80	23.79	3.19	0.00	112.0

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	-0.9	-7.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.9	64.6
OPER	151.3	-106.5	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	-35.84	37.28	-27.57	28.68	-26.94	29.08	-20.72	22.37
OPER	HS20	-35.84	37.28	-27.57	28.68	-26.94	29.08	-20.72	22.37
OPER	2F1	-20.44	21.18	-15.72	16.29	0.00	0.00	0.00	0.00
OPER	3F1	-28.72	29.85	-22.10	22.96	0.00	0.00	0.00	0.00
OPER	4F1	-30.04	31.38	-23.11	24.14	0.00	0.00	0.00	0.00
OPER	5C1	-27.19	28.92	-20.92	22.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.59	1.73	HS 31.73	57.1
HS20	2.64	2.89	HS 52.88	95.2
2F1	4.80	5.09	0.00	72.0
3F1	3.36	3.61	0.00	77.2
4F1	3.14	3.43	0.00	84.8
5C1	3.53	3.73	0.00	141.1

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. 2.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

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. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00	
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00	
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00	
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00	
		-81.29 R	-62.53	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.41	1.27	12.41	1.27	HS 25.47	45.8
HS20	20.68	2.12	20.68	2.12	HS 42.45	76.4
2F1	30.76	4.63	30.76	4.63	0.00	69.4
3F1	21.44	3.11	21.44	3.11	0.00	71.4
4F1	19.93	2.60	19.93	2.60	0.00	70.1

5C1	24.62	2.93	24.62	2.93	0.00	117.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 Moment Superimposed Dead Load Moment
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00			
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00			
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00			
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00			
		-81.29 R	-62.53	28.74	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	13.23	1.22	11.99	1.39	HS 24.32	43.8
HS20	22.05	2.03	19.99	2.31	HS 40.53	73.0
2F1	32.80	4.42	29.73	5.04	0.00	66.3
3F1	22.86	2.96	20.73	3.38	0.00	68.2
4F1	21.25	2.48	19.26	2.83	0.00	66.9
5C1	26.25	2.80	23.79	3.19	0.00	112.0

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	0.8	-9.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.9	64.6
OPER	151.3	-106.5	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	-40.27	37.28	-30.98	28.68	-29.34	29.08	-22.57	22.37
OPER	HS20	-40.27	37.28	-30.98	28.68	-29.34	29.08	-22.57	22.37
OPER	2F1	-22.19	21.18	-17.07	16.29	0.00	0.00	0.00	0.00
OPER	3F1	-31.72	29.85	-24.40	22.96	0.00	0.00	0.00	0.00
OPER	4F1	-33.90	31.38	-26.07	24.14	0.00	0.00	0.00	0.00
OPER	5C1	-30.19	28.92	-23.23	22.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.59	1.73	HS 31.73	57.1
HS20	2.64	2.89	HS 52.88	95.2
2F1	4.80	5.09	0.00	72.0
3F1	3.36	3.61	0.00	77.2
4F1	3.14	3.43	0.00	84.8
5C1	3.53	3.73	0.00	141.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.8
Superimposed Dead Load Moment -37.3

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. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00	
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00	
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00	
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00	
		-81.29 R	-62.53	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.41	1.27	12.41	1.27	HS 25.47	45.8
HS20	20.68	2.12	20.68	2.12	HS 42.45	76.4
2F1	30.76	4.63	30.76	4.63	0.00	69.4
3F1	21.44	3.11	21.44	3.11	0.00	71.4
4F1	19.93	2.60	19.93	2.60	0.00	70.1

5C1	24.62	2.93	24.62	2.93	0.00	117.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 2.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.1
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	193.8	-147.8	174.6	-167.0
OPER	300.6C	-268.7	268.7	-300.6C	323.0	-246.3	291.0	-278.3

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	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31			
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27		
OPER	HS20	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31			
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27		
OPER	2F1	16.36 R	12.58	36.31	0.0	0.00	0.00	0.00			
		-44.99 L	-34.61	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.18 R	10.91	40.31	0.0	0.00	0.00	0.00			
		-64.36 L	-49.51	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	7.94 R	6.11	71.40	0.0	0.00	0.00	0.00			
		-68.98 L	-53.06	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.63 R	18.18	77.31	0.0	0.00	0.00	0.00			
		-59.16 L	-45.50	-2.43	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	8.14	1.96	7.34	2.22	HS 39.24	70.6
HS20	13.57	3.27	12.23	3.69	HS 65.41	117.7
2F1	19.75	5.47	17.79	6.19	0.00	82.1
3F1	22.78	3.83	20.53	4.32	0.00	88.0
4F1	40.66	3.57	36.63	4.03	0.00	96.4
5C1	13.67	4.16	12.31	4.70	0.00	166.5

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.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.4	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	-3.11	32.69	-2.39	25.14	-3.21	26.19	-2.47	20.15
OPER	HS20	-3.11	32.69	-2.39	25.14	-3.21	26.19	-2.47	20.15
OPER	2F1	-2.18	19.16	-1.68	14.73	0.00	0.00	0.00	0.00
OPER	3F1	-3.12	26.41	-2.40	20.31	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	27.26	-2.57	20.97	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	25.54	-2.45	19.65	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.04	2.01	HS 40.15	72.3
HS20	38.40	3.35	HS 66.92	120.5
2F1	56.65	5.71	0.00	85.6
3F1	39.49	4.14	0.00	95.3
4F1	36.94	4.01	0.00	108.3
5C1	38.76	4.28	0.00	171.3

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. 2.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.1 -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. 154.2	158.7	-176.6	158.7	-176.6	181.1	-154.2	181.1	-
OPER 257.0	279.4	-279.4	279.4	-279.4	301.8	-257.0	301.8	-

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	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31	
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27
OPER	HS20	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31	
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27
OPER	2F1	16.36 R	12.58	36.31	0.0	0.00	0.00	0.00	
		-44.99 L	-34.61	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.18 R	10.91	40.31	0.0	0.00	0.00	0.00	
		-64.36 L	-49.51	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	7.94 R	6.11	71.40	0.0	0.00	0.00	0.00	
		-68.98 L	-53.06	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.63 R	18.18	77.31	0.0	0.00	0.00	0.00	
		-59.16 L	-45.50	-2.43	0.0	0.00	0.00	0.00	0.00

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	2.05	7.61	2.05	HS 40.96	73.7
HS20	12.68	3.41	12.68	3.41	HS 68.26	122.9
2F1	18.45	5.71	18.45	5.71	0.00	85.7
3F1	21.29	3.99	21.29	3.99	0.00	91.9
4F1	37.99	3.73	37.99	3.73	0.00	100.6

5C1	12.77	4.34	12.77	4.34	0.00	173.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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
-0.7	-6.8

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	184.9	-156.7	165.7	-175.8
OPER	300.6C	-268.7	268.7	-300.6C	308.2	-261.1	276.2	-293.1

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	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70			
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27		
OPER	HS20	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70			
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27		
OPER	2F1	42.76 R	32.90	38.70	0.0	0.00	0.00	0.00			
		-38.45 L	-29.58	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.25 R	40.20	42.70	0.0	0.00	0.00	0.00			
		-55.01 L	-42.32	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.39 R	37.22	46.70	0.0	0.00	0.00	0.00			
		-58.96 L	-45.36	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.89 R	39.92	44.70	0.0	0.00	0.00	0.00			
		-51.32 L	-39.47	2.35	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	2.80	2.52	2.51	2.83	HS 50.10	90.2
HS20	4.66	4.20	4.18	4.71	HS 83.50	150.3
2F1	7.21	6.79	6.46	7.62	0.00	96.9
3F1	5.90	4.75	5.29	5.33	0.00	109.2
4F1	6.37	4.43	5.71	4.97	0.00	119.6
5C1	5.94	5.09	5.32	5.71	0.00	203.5

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.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.1	66.6
OPER	151.3	-121.8	111.0

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	-3.11	27.47	-2.39	21.13	-4.78	23.07	-3.67	17.75
OPER	HS20	-3.11	27.47	-2.39	21.13	-4.78	23.07	-3.67	17.75
OPER	2F1	-2.18	16.65	-1.68	12.81	0.00	0.00	0.00	0.00
OPER	3F1	-3.12	22.50	-2.40	17.31	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	23.34	-2.57	17.95	0.00	0.00	0.00	0.00
OPER	5C1	-4.95	21.74	-3.81	16.72	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.30	2.42	HS 48.49	87.3
HS20	25.49	4.04	HS 80.82	145.5
2F1	55.91	6.66	0.00	100.0
3F1	38.97	4.93	0.00	113.5
4F1	36.45	4.76	0.00	128.4
5C1	24.58	5.11	0.00	204.2

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. 2.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.7 -6.8

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. 163.1	164.6	-170.7	164.6	-170.7	172.2	-163.1	172.2	-
OPER 271.8	279.4	-279.4	279.4	-279.4	287.0	-271.8	287.0	-

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	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70	
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27
OPER	HS20	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70	
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27
OPER	2F1	42.76 R	32.90	38.70	0.0	0.00	0.00	0.00	
		-38.45 L	-29.58	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.25 R	40.20	42.70	0.0	0.00	0.00	0.00	
		-55.01 L	-42.32	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.39 R	37.22	46.70	0.0	0.00	0.00	0.00	
		-58.96 L	-45.36	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.89 R	39.92	44.70	0.0	0.00	0.00	0.00	
		-51.32 L	-39.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.60	2.62	2.60	2.62	HS 52.05	93.7
HS20	4.34	4.37	4.34	4.37	HS 86.74	156.1
2F1	6.71	7.07	6.71	7.07	0.00	100.7
3F1	5.49	4.94	5.49	4.94	0.00	113.7
4F1	5.93	4.61	5.93	4.61	0.00	124.5

5C1

5.53

5.30

5.53

5.30

0.00

211.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 0.3
Superimposed Dead Load Moment 3.1

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	178.4	-163.2	159.2	-182.4
OPER	300.6C	-268.7	268.7	-300.6C	297.3	-272.0	265.3	-304.0

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	93.24	R	71.73	59.09	0.0	67.74	52.11	31.09		
		-51.67	L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00	
OPER	HS20	93.24	R	71.73	59.09	0.0	67.74	52.11	31.09		
		-51.67	L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00	
OPER	2F1	61.53	R	47.33	41.09	0.0	0.00	0.00	0.00		
		-31.92	L	-24.56	6.74	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	77.76	R	59.81	45.09	0.0	0.00	0.00	0.00		
		-45.67	L	-35.13	4.35	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	79.23	R	60.95	45.09	0.0	0.00	0.00	0.00		
		-48.95	L	-37.65	1.13	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	75.97	R	58.44	47.09	0.0	0.00	0.00	0.00		
		-46.94	L	-36.11	3.13	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	1.91	3.16	1.71	3.53	HS 34.14	61.4
HS20	3.19	5.26	2.85	5.88	HS 56.90	102.4
2F1	4.83	8.52	4.31	9.52	0.00	64.7
3F1	3.82	5.96	3.41	6.66	0.00	78.5
4F1	3.75	5.56	3.35	6.21	0.00	90.4
5C1	3.91	5.80	3.49	6.48	0.00	139.7

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.	2.300		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	-72.1	67.6
OPER	151.3	-120.1	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	-5.73	22.82	-4.41	17.55	-7.33	19.82	-5.64	15.24
OPER	HS20	-5.73	22.82	-4.41	17.55	-7.33	19.82	-5.64	15.24
OPER	2F1	-4.04	13.99	-3.10	10.76	0.00	0.00	0.00	0.00
OPER	3F1	-4.24	18.48	-3.26	14.21	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	19.08	-2.57	14.68	0.00	0.00	0.00	0.00
OPER	5C1	-7.03	17.87	-5.41	13.75	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.83	2.96	HS 59.22	106.6
HS20	16.39	4.93	HS 98.69	177.6
2F1	29.77	8.05	0.00	120.7
3F1	28.34	6.09	0.00	140.2
4F1	35.97	5.90	0.00	159.4
5C1	17.08	6.30	0.00	252.0

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. 2.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.1

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. 169.7	169.0	-166.3	169.0	-166.3	165.6	-169.7	165.6	-
OPER 282.8	279.4	-279.4	279.4	-279.4	276.0	-282.8	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	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09	
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00
OPER	HS20	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09	
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00
OPER	2F1	61.53 R	47.33	41.09	0.0	0.00	0.00	0.00	
		-31.92 L	-24.56	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	77.76 R	59.81	45.09	0.0	0.00	0.00	0.00	
		-45.67 L	-35.13	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	79.23 R	60.95	45.09	0.0	0.00	0.00	0.00	
		-48.95 L	-37.65	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	75.97 R	58.44	47.09	0.0	0.00	0.00	0.00	
		-46.94 L	-36.11	3.13	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	3.28	1.78	3.28	HS 35.52	63.9
HS20	2.96	5.47	2.96	5.47	HS 59.20	106.6
2F1	4.49	8.86	4.49	8.86	0.00	67.3
3F1	3.55	6.19	3.55	6.19	0.00	81.6
4F1	3.48	5.78	3.48	5.78	0.00	94.1

5C1

3.63

6.02

3.63

6.02

0.00

145.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
0.9	9.5

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	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.1

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	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48			
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00		
OPER	HS20	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48			
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00		
OPER	2F1	71.35 R	54.88	43.48	0.0	0.00	0.00	0.00			
		-25.39 L	-19.53	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.64 R	69.72	43.48	0.0	0.00	0.00	0.00			
		-36.32 L	-27.94	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.79 R	74.46	47.48	0.0	0.00	0.00	0.00			
		-38.93 L	-29.95	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	88.69 R	68.22	84.48	0.0	0.00	0.00	0.00			
		-43.24 L	-33.26	4.01	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	1.69	4.07	1.50	4.54	HS 30.06	54.1
HS20	2.82	6.79	2.51	7.57	HS 50.09	90.2
2F1	4.07	10.99	3.62	12.25	0.00	54.3
3F1	3.20	7.68	2.85	8.56	0.00	65.5
4F1	3.00	7.17	2.67	7.99	0.00	72.0
5C1	3.27	6.45	2.91	7.20	0.00	116.5

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.	2.400		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 (-)	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	-10.63	19.05	-8.17	14.66	-10.19	16.54	-7.84	12.72
OPER	HS20	-10.63	19.05	-8.17	14.66	-10.19	16.54	-7.84	12.72
OPER	2F1	-6.36	11.29	-4.90	8.68	0.00	0.00	0.00	0.00
OPER	3F1	-7.46	14.50	-5.74	11.16	0.00	0.00	0.00	0.00
OPER	4F1	-6.23	14.61	-4.79	11.24	0.00	0.00	0.00	0.00
OPER	5C1	-9.39	14.89	-7.22	11.45	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.69	3.60	HS 71.94	129.5
HS20	11.15	5.99	HS 119.89	215.8
2F1	18.62	10.12	0.00	151.8
3F1	15.88	7.88	0.00	181.2
4F1	19.01	7.82	0.00	211.0
5C1	12.63	7.67	0.00	306.9

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. 2.400 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

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. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
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	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48	
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00
OPER	HS20	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48	
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00
OPER	2F1	71.35 R	54.88	43.48	0.0	0.00	0.00	0.00	
		-25.39 L	-19.53	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.64 R	69.72	43.48	0.0	0.00	0.00	0.00	
		-36.32 L	-27.94	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.79 R	74.46	47.48	0.0	0.00	0.00	0.00	
		-38.93 L	-29.95	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	88.69 R	68.22	84.48	0.0	0.00	0.00	0.00	
		-43.24 L	-33.26	4.01	0.0	0.00	0.00	0.00	0.00

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	4.23	1.57	4.23	HS 31.31	56.4
HS20	2.61	7.05	2.61	7.05	HS 52.18	93.9
2F1	3.77	11.42	3.77	11.42	0.00	56.5
3F1	2.97	7.98	2.97	7.98	0.00	68.2
4F1	2.78	7.45	2.78	7.45	0.00	75.0

5C1 3.03 6.70 3.03 6.70 0.00 121.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 2.500
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.2
 Superimposed Dead Load Moment 12.5

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	172.2	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	287.0	-282.3	255.0	-314.3

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	98.70	L	75.92	21.88	0.0	86.01	66.16	35.88		
		-30.52	L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00	
OPER	HS20	98.70	L	75.92	21.88	0.0	86.01	66.16	35.88		
		-30.52	L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00	
OPER	2F1	72.01	L	55.39	25.88	0.0	0.00	0.00	0.00		
		-18.86	L	-14.51	6.74	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	95.59	R	73.53	45.88	0.0	0.00	0.00	0.00		
		-26.98	L	-20.75	4.35	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	99.25	R	76.34	49.88	0.0	0.00	0.00	0.00		
		-28.91	L	-22.24	1.13	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	93.55	R	71.96	86.88	0.0	0.00	0.00	0.00		
		-40.83	L	-31.41	4.74	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	5.55	1.55	6.18	HS 31.00	55.8
HS20	2.91	9.25	2.58	10.30	HS 51.67	93.0
2F1	3.99	14.97	3.54	16.67	0.00	53.1
3F1	3.00	10.47	2.67	11.65	0.00	61.4
4F1	2.89	9.76	2.57	10.87	0.00	69.4
5C1	3.07	6.91	2.73	7.70	0.00	109.0

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.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	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	-15.05	15.01	-11.58	11.54	-13.27	13.32	-10.21	10.25
OPER	HS20	-15.05	15.01	-11.58	11.54	-13.27	13.32	-10.21	10.25
OPER	2F1	-8.91	8.64	-6.86	6.64	0.00	0.00	0.00	0.00
OPER	3F1	-11.05	10.72	-8.50	8.25	0.00	0.00	0.00	0.00
OPER	4F1	-10.52	10.08	-8.10	7.75	0.00	0.00	0.00	0.00
OPER	5C1	-11.96	12.26	-9.20	9.43	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.66	4.63	HS 92.64	166.8
HS20	7.77	7.72	HS 154.41	277.9
2F1	13.12	13.41	0.00	196.8
3F1	10.58	10.81	0.00	243.3
4F1	11.11	11.50	0.00	299.9
5C1	9.77	9.45	0.00	377.8

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. 2.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.5

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. 175.8	173.1	-162.2	173.1	-162.2	159.5	-175.8	159.5	-
OPER 293.0	279.4	-279.4	279.4	-279.4	265.8	-293.0	265.8	-

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	98.70 L	75.92	21.88	0.0	86.01	66.16	35.88	
		-30.52 L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00
OPER	HS20	98.70 L	75.92	21.88	0.0	86.01	66.16	35.88	
		-30.52 L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00
OPER	2F1	72.01 L	55.39	25.88	0.0	0.00	0.00	0.00	
		-18.86 L	-14.51	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	95.59 R	73.53	45.88	0.0	0.00	0.00	0.00	
		-26.98 L	-20.75	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	99.25 R	76.34	49.88	0.0	0.00	0.00	0.00	
		-28.91 L	-22.24	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.55 R	71.96	86.88	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	4.74	0.0	0.00	0.00	0.00	0.00

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	5.76	1.62	5.76	HS 32.31	58.2
HS20	2.69	9.60	2.69	9.60	HS 53.85	96.9
2F1	3.69	15.54	3.69	15.54	0.00	55.4
3F1	2.78	10.86	2.78	10.86	0.00	63.9
4F1	2.68	10.14	2.68	10.14	0.00	72.3

5C1	2.84	7.18	2.84	7.18	0.00	113.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 11.5

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	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

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	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27			
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00		
OPER	HS20	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27			
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00		
OPER	2F1	70.62 L	54.33	28.27	0.0	0.00	0.00	0.00			
		-20.83 R	-16.03	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.38 L	68.76	28.27	0.0	0.00	0.00	0.00			
		-29.89 R	-22.99	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	95.46 L	73.43	24.27	0.0	0.00	0.00	0.00			
		-32.16 R	-24.74	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.03 L	69.26	26.27	0.0	0.00	0.00	0.00			
		-39.49 L	-30.38	5.62	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	5.45	1.52	6.07	HS 30.36	54.6
HS20	2.85	9.08	2.53	10.11	HS 50.59	91.1
2F1	4.08	13.50	3.62	15.04	0.00	54.4
3F1	3.22	9.41	2.86	10.48	0.00	65.9
4F1	3.02	8.75	2.68	9.74	0.00	72.4
5C1	3.20	7.12	2.84	7.93	0.00	113.7

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.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.1	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.1	70.6
OPER	151.3	-115.1	117.6

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	-18.94	10.44	-14.57	8.03	-16.49	10.27	-12.69	7.90
OPER	HS20	-18.94	10.44	-14.57	8.03	-16.49	10.27	-12.69	7.90
OPER	2F1	-11.59	6.14	-8.91	4.73	0.00	0.00	0.00	0.00
OPER	3F1	-14.90	7.24	-11.46	5.57	0.00	0.00	0.00	0.00
OPER	4F1	-15.05	6.14	-11.58	4.72	0.00	0.00	0.00	0.00
OPER	5C1	-14.71	9.99	-11.31	7.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.76	HS 72.97	131.3
HS20	6.08	11.27	HS 121.61	218.9
2F1	9.94	19.14	0.00	149.1
3F1	7.73	16.24	0.00	177.7
4F1	7.65	19.16	0.00	206.5
5C1	7.83	11.77	0.00	313.1

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. 2.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.5

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. 175.2	172.7	-162.6	172.7	-162.6	160.0	-175.2	160.0	-
OPER 292.1	279.4	-279.4	279.4	-279.4	266.7	-292.1	266.7	-

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	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27	
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00
OPER	HS20	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27	
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00
OPER	2F1	70.62 L	54.33	28.27	0.0	0.00	0.00	0.00	
		-20.83 R	-16.03	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.38 L	68.76	28.27	0.0	0.00	0.00	0.00	
		-29.89 R	-22.99	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	95.46 L	73.43	24.27	0.0	0.00	0.00	0.00	
		-32.16 R	-24.74	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.03 L	69.26	26.27	0.0	0.00	0.00	0.00	
		-39.49 L	-30.38	5.62	0.0	0.00	0.00	0.00	0.00

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	5.66	1.58	5.66	HS 31.63	56.9
HS20	2.64	9.43	2.64	9.43	HS 52.72	94.9
2F1	3.78	14.02	3.78	14.02	0.00	56.7
3F1	2.98	9.77	2.98	9.77	0.00	68.6
4F1	2.79	9.08	2.79	9.08	0.00	75.4

5C1	2.96	7.40	2.96	7.40	0.00	118.5
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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 Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 7.1

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	175.7	-165.9	156.5	-185.1
OPER	300.6C	-268.7	268.7	-300.6C	292.8	-276.4	260.9	-308.4

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	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66			
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00		
OPER	HS20	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66			
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00		
OPER	2F1	59.96 L	46.12	30.66	0.0	0.00	0.00	0.00			
		-26.04 R	-20.03	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.56 L	58.12	26.66	0.0	0.00	0.00	0.00			
		-37.36 R	-28.74	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.83 L	59.10	26.66	0.0	0.00	0.00	0.00			
		-40.20 R	-30.92	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.95 R	60.73	87.66	0.0	0.00	0.00	0.00			
		-39.92 R	-30.70	68.62	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	1.94	4.28	1.73	4.78	HS 34.51	62.1
HS20	3.23	7.14	2.88	7.96	HS 57.51	103.5
2F1	4.88	10.61	4.35	11.84	0.00	65.3
3F1	3.88	7.40	3.45	8.26	0.00	79.4
4F1	3.81	6.88	3.39	7.67	0.00	91.7
5C1	3.71	6.93	3.30	7.73	0.00	132.2

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.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-2.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.1	71.5
OPER	151.3	-113.5	119.2

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	-22.69	5.44	-17.45	4.18	-19.75	7.46	-15.20	5.74
OPER	HS20	-22.69	5.44	-17.45	4.18	-19.75	7.46	-15.20	5.74
OPER	2F1	-14.29	3.90	-10.99	3.00	0.00	0.00	0.00	0.00
OPER	3F1	-18.91	4.16	-14.54	3.20	0.00	0.00	0.00	0.00
OPER	4F1	-19.46	4.16	-14.97	3.20	0.00	0.00	0.00	0.00
OPER	5C1	-17.98	7.82	-13.83	6.01	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.00	9.59	HS 60.04	108.1
HS20	5.00	15.98	HS 100.07	180.1
2F1	7.94	30.59	0.00	119.2
3F1	6.01	28.65	0.00	138.1
4F1	5.83	28.65	0.00	157.5
5C1	6.32	15.25	0.00	252.6

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.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.7	7.1

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. 172.3	170.8	-164.5	170.8	-164.5	163.0	-172.3	163.0	-
OPER 287.2	279.4	-279.4	279.4	-279.4	271.6	-287.2	271.6	-

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	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66	
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00
OPER	HS20	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66	
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00
OPER	2F1	59.96 L	46.12	30.66	0.0	0.00	0.00	0.00	
		-26.04 R	-20.03	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.56 L	58.12	26.66	0.0	0.00	0.00	0.00	
		-37.36 R	-28.74	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.83 L	59.10	26.66	0.0	0.00	0.00	0.00	
		-40.20 R	-30.92	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.95 R	60.73	87.66	0.0	0.00	0.00	0.00	
		-39.92 R	-30.70	68.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	4.45	1.80	4.45	HS 35.93	64.7
HS20	2.99	7.41	2.99	7.41	HS 59.88	107.8
2F1	4.53	11.03	4.53	11.03	0.00	67.9
3F1	3.59	7.69	3.59	7.69	0.00	82.7
4F1	3.54	7.14	3.54	7.14	0.00	95.5

5C1	3.44	7.20	3.44	7.20	0.00	137.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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	-0.8

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	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-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	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05			
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23		
OPER	HS20	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05			
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23		
OPER	2F1	40.60 L	31.23	33.05	0.0	0.00	0.00	0.00			
		-31.25 R	-24.04	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.01 L	37.70	29.05	0.0	0.00	0.00	0.00			
		-44.83 R	-34.49	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.87 L	34.51	25.05	0.0	0.00	0.00	0.00			
		-48.24 R	-37.11	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.70 R	45.16	90.05	0.0	0.00	0.00	0.00			
		-41.67 R	-32.05	69.40	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	2.88	3.46	2.58	3.87	HS 51.52	92.7
HS20	4.80	5.76	4.29	6.45	HS 85.87	154.6
2F1	7.43	8.57	6.64	9.59	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.5
4F1	6.72	5.55	6.01	6.21	0.00	149.8
5C1	5.14	6.43	4.59	7.19	0.00	183.7

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	-4.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.1	72.5
OPER	151.3	-111.9	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	-27.81	4.22	-21.39	3.25	-22.96	4.98	-17.66	3.83
OPER	HS20	-27.81	4.22	-21.39	3.25	-22.96	4.98	-17.66	3.83
OPER	2F1	-16.92	2.73	-13.01	2.10	0.00	0.00	0.00	0.00
OPER	3F1	-22.91	3.91	-17.62	3.01	0.00	0.00	0.00	0.00
OPER	4F1	-23.62	4.16	-18.17	3.20	0.00	0.00	0.00	0.00
OPER	5C1	-21.57	5.81	-16.59	4.47	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.41	14.55	HS 48.30	86.9
HS20	4.03	24.24	HS 80.49	144.9
2F1	6.62	44.24	0.00	99.2
3F1	4.88	30.92	0.00	112.3
4F1	4.74	29.04	0.00	127.9
5C1	5.19	20.78	0.00	207.5

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. 2.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -0.8

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. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

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	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05	
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23
OPER	HS20	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05	
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23
OPER	2F1	40.60 L	31.23	33.05	0.0	0.00	0.00	0.00	
		-31.25 R	-24.04	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.01 L	37.70	29.05	0.0	0.00	0.00	0.00	
		-44.83 R	-34.49	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.87 L	34.51	25.05	0.0	0.00	0.00	0.00	
		-48.24 R	-37.11	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.70 R	45.16	90.05	0.0	0.00	0.00	0.00	
		-41.67 R	-32.05	69.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.58	96.4
HS20	4.47	5.99	4.47	5.99	HS 89.29	160.7
2F1	6.90	8.91	6.90	8.91	0.00	103.6
3F1	5.72	6.21	5.72	6.21	0.00	131.6
4F1	6.25	5.77	6.25	5.77	0.00	155.8

5C1	4.78	6.68	4.78	6.68	0.00	191.0
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-12.3

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	188.5	-153.1	169.3	-172.2
OPER	300.6C	-268.7	268.7	-300.6C	314.2	-255.1	282.2	-287.1

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	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44			
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88		
OPER	HS20	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44			
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88		
OPER	2F1	14.14 L	10.88	35.44	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.02 R	10.78	91.32	0.0	0.00	0.00	0.00			
		-52.30 R	-40.23	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.90 R	11.46	95.32	0.0	0.00	0.00	0.00			
		-56.28 R	-43.29	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.62 R	22.79	92.44	0.0	0.00	0.00	0.00			
		-45.81 R	-35.24	71.79	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	7.02	2.52	6.30	2.84	HS 50.38	90.7
HS20	11.70	4.20	10.51	4.72	HS 83.97	151.1
2F1	22.22	7.00	19.95	7.87	0.00	105.0
3F1	22.42	4.88	20.14	5.49	0.00	112.2
4F1	21.09	4.53	18.94	5.10	0.00	122.4
5C1	10.61	5.57	9.53	6.27	0.00	222.7

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

-0.6 -5.5 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	-32.97	4.42	-25.36	3.40	-26.00	4.17	-20.00	3.20
OPER	HS20	-32.97	4.42	-25.36	3.40	-26.00	4.17	-20.00	3.20
OPER	2F1	-19.36	2.73	-14.89	2.10	0.00	0.00	0.00	0.00
OPER	3F1	-26.76	3.91	-20.58	3.01	0.00	0.00	0.00	0.00
OPER	4F1	-27.60	4.19	-21.23	3.22	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	4.03	-19.36	3.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	16.62	HS 40.15	72.3
HS20	3.35	27.70	HS 66.91	120.4
2F1	5.70	44.83	0.00	85.5
3F1	4.12	31.34	0.00	94.8
4F1	3.99	29.24	0.00	107.9
5C1	4.38	30.41	0.00	175.3

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. 2.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -12.3

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. 159.5	162.2	-173.1	162.2	-173.1	175.8	-159.5	175.8	-
OPER 265.8	279.4	-279.4	279.4	-279.4	293.0	-265.8	293.0	-

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	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44	
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88
OPER	HS20	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44	
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88
OPER	2F1	14.14 L	10.88	35.44	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.02 R	10.78	91.32	0.0	0.00	0.00	0.00	
		-52.30 R	-40.23	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.90 R	11.46	95.32	0.0	0.00	0.00	0.00	
		-56.28 R	-43.29	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.62 R	22.79	92.44	0.0	0.00	0.00	0.00	
		-45.81 R	-35.24	71.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.55	2.62	6.55	2.62	HS 52.51	94.5
HS20	10.91	4.38	10.91	4.38	HS 87.51	157.5
2F1	20.71	7.29	20.71	7.29	0.00	109.4
3F1	20.90	5.08	20.90	5.08	0.00	116.9
4F1	19.66	4.72	19.66	4.72	0.00	127.5

5C1	9.89	5.80	9.89	5.80	0.00	232.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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
-2.8 -27.3

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	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

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	22.35	L	17.19	-8.87	0.0	19.84	15.26	14.35		
		-106.16	L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40	
OPER	HS20	22.35	L	17.19	-8.87	0.0	19.84	15.26	14.35		
		-106.16	L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40	
OPER	2F1	13.80	L	10.62	6.74	0.0	0.00	0.00	0.00		
		-42.58	L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	19.75	L	15.19	4.35	0.0	0.00	0.00	0.00		
		-68.95	R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	21.17	L	16.28	1.13	0.0	0.00	0.00	0.00		
		-80.57	R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	17.88	L	13.75	-35.04	0.0	0.00	0.00	0.00		
		-66.42	L	-51.09	43.01	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	8.88	1.35	8.02	1.53	HS 26.97	48.5
HS20	14.80	2.25	13.37	2.55	HS 44.95	80.9
2F1	23.95	5.60	21.64	6.36	0.00	84.1
3F1	16.75	3.46	15.12	3.92	0.00	79.6
4F1	15.62	2.96	14.11	3.36	0.00	80.0
5C1	18.49	3.59	16.70	4.07	0.00	143.7

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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.5	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-65.2	65.0
OPER	151.3	-108.7	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	-32.97	37.61	-25.36	28.93	-26.00	28.93	-20.00	22.25
OPER	HS20	-32.97	37.61	-25.36	28.93	-26.00	28.93	-20.00	22.25
OPER	2F1	-19.36	21.46	-14.89	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.76	30.17	-20.58	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.60	31.71	-21.23	24.39	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	28.29	-19.36	21.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.73	HS 34.50	62.1
HS20	2.88	2.88	HS 57.49	103.5
2F1	5.05	5.05	0.00	75.7
3F1	3.59	3.59	0.00	82.5
4F1	3.41	3.42	0.00	92.0
5C1	3.80	3.83	0.00	152.1

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. 3.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

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. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00	
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00	
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00	
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00	
		-66.42 L	-51.09	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.41	8.31	1.41	HS 28.19	50.7
HS20	13.85	2.35	13.85	2.35	HS 46.98	84.6
2F1	22.42	5.86	22.42	5.86	0.00	87.9
3F1	15.67	3.62	15.67	3.62	0.00	83.2
4F1	14.62	3.10	14.62	3.10	0.00	83.6

5C1	17.31	3.75	17.31	3.75	0.00	150.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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
-2.8 -27.3

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	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

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	22.35	L	17.19	-8.87	0.0	19.84	15.26	14.35		
		-106.16	L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40	
OPER	HS20	22.35	L	17.19	-8.87	0.0	19.84	15.26	14.35		
		-106.16	L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40	
OPER	2F1	13.80	L	10.62	6.74	0.0	0.00	0.00	0.00		
		-42.58	L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	19.75	L	15.19	4.35	0.0	0.00	0.00	0.00		
		-68.95	R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	21.17	L	16.28	1.13	0.0	0.00	0.00	0.00		
		-80.57	R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	17.88	L	13.75	-35.04	0.0	0.00	0.00	0.00		
		-66.42	L	-51.09	43.01	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	8.88	1.35	8.02	1.53	HS 26.97	48.5
HS20	14.80	2.25	13.37	2.55	HS 44.95	80.9
2F1	23.95	5.60	21.64	6.36	0.00	84.1
3F1	16.75	3.46	15.12	3.92	0.00	79.6
4F1	15.62	2.96	14.11	3.36	0.00	80.0
5C1	18.49	3.59	16.70	4.07	0.00	143.7

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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.0	7.3

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-65.2	65.0
OPER	151.3	-108.7	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	-37.80	37.61	-29.08	28.93	-28.78	28.93	-22.14	22.25
OPER	HS20	-37.80	37.61	-29.08	28.93	-28.78	28.93	-22.14	22.25
OPER	2F1	-21.52	21.46	-16.55	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.29	30.17	-23.30	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.88	31.71	-24.52	24.39	0.00	0.00	0.00	0.00
OPER	5C1	-28.58	28.29	-21.99	21.76	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.73	HS 34.50	62.1
HS20	2.88	2.88	HS 57.49	103.5
2F1	5.05	5.05	0.00	75.7
3F1	3.59	3.59	0.00	82.5
4F1	3.41	3.42	0.00	92.0
5C1	3.80	3.83	0.00	152.1

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. 3.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

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. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00	
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00	
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00	
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00	
		-66.42 L	-51.09	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.41	8.31	1.41	HS 28.19	50.7
HS20	13.85	2.35	13.85	2.35	HS 46.98	84.6
2F1	22.42	5.86	22.42	5.86	0.00	87.9
3F1	15.67	3.62	15.67	3.62	0.00	83.2
4F1	14.62	3.10	14.62	3.10	0.00	83.6

5C1	17.31	3.75	17.31	3.75	0.00	150.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -11.6

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	188.0	-153.5	168.8	-172.7
OPER	300.6C	-268.7	268.7	-300.6C	313.4	-255.9	281.4	-287.9

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	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23			
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79		
OPER	HS20	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23			
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79		
OPER	2F1	14.51 R	11.16	60.23	0.0	0.00	0.00	0.00			
		-37.18 L	-28.60	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.24 L	13.27	4.35	0.0	0.00	0.00	0.00			
		-53.32 L	-41.02	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.32 L	14.10	0.35	0.0	0.00	0.00	0.00			
		-57.36 L	-44.12	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.79 L	25.22	3.23	0.0	0.00	0.00	0.00			
		-46.95 L	-36.12	24.66	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	2.48	6.09	2.79	HS 49.63	89.3
HS20	11.30	4.14	10.15	4.65	HS 82.72	148.9
2F1	21.60	6.88	19.40	7.74	0.00	103.2
3F1	18.17	4.80	16.32	5.40	0.00	110.4
4F1	17.10	4.46	15.36	5.02	0.00	120.5
5C1	9.56	5.45	8.58	6.13	0.00	218.0

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.	3.100		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	-73.7	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	-3.17	32.74	-2.43	25.18	-3.56	26.12	-2.74	20.09
OPER	HS20	-3.17	32.74	-2.43	25.18	-3.56	26.12	-2.74	20.09
OPER	2F1	-2.22	19.27	-1.71	14.82	0.00	0.00	0.00	0.00
OPER	3F1	-3.18	26.59	-2.45	20.46	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	27.40	-2.62	21.08	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	24.87	-2.48	19.13	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.71	2.02	HS 40.30	72.5
HS20	34.51	3.36	HS 67.17	120.9
2F1	55.38	5.71	0.00	85.6
3F1	38.60	4.14	0.00	95.1
4F1	36.11	4.01	0.00	108.4
5C1	38.04	4.42	0.00	176.8

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. 3.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.2 -11.6

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. 160.0	162.5	-172.7	162.5	-172.7	175.3	-160.0	175.3	-
OPER 266.6	279.4	-279.4	279.4	-279.4	292.2	-266.6	292.2	-

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	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23	
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79
OPER	HS20	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23	
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79
OPER	2F1	14.51 R	11.16	60.23	0.0	0.00	0.00	0.00	
		-37.18 L	-28.60	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.24 L	13.27	4.35	0.0	0.00	0.00	0.00	
		-53.32 L	-41.02	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.32 L	14.10	0.35	0.0	0.00	0.00	0.00	
		-57.36 L	-44.12	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.79 L	25.22	3.23	0.0	0.00	0.00	0.00	
		-46.95 L	-36.12	24.66	0.0	0.00	0.00	0.00	0.00

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	2.59	6.32	2.59	HS 51.71	93.1
HS20	10.54	4.31	10.54	4.31	HS 86.19	155.1
2F1	20.14	7.17	20.14	7.17	0.00	107.6
3F1	16.94	5.00	16.94	5.00	0.00	115.0
4F1	15.94	4.65	15.94	4.65	0.00	125.5

5C1	8.91	5.68	8.91	5.68	0.00	227.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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
0.0 0.6

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.	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	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62			
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36		
OPER	HS20	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62			
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36		
OPER	2F1	40.79 R	31.37	62.62	0.0	0.00	0.00	0.00			
		-31.78 L	-24.44	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.29 R	37.91	66.62	0.0	0.00	0.00	0.00			
		-45.58 L	-35.06	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	45.17 R	34.75	70.62	0.0	0.00	0.00	0.00			
		-49.03 L	-37.71	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.94 L	46.87	5.62	0.0	0.00	0.00	0.00			
		-42.43 L	-32.64	26.27	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	3.44	2.55	3.85	HS 51.00	91.8
HS20	4.76	5.74	4.25	6.42	HS 84.99	153.0
2F1	7.36	8.48	6.57	9.48	0.00	98.6
3F1	6.09	5.91	5.44	6.61	0.00	125.1
4F1	6.64	5.49	5.93	6.14	0.00	148.3
5C1	4.92	6.35	4.40	7.10	0.00	175.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.200

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	66.9
OPER	151.3	-121.2	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	-3.17	27.56	-2.43	21.20	-4.95	23.04	-3.81	17.72
OPER	HS20	-3.17	27.56	-2.43	21.20	-4.95	23.04	-3.81	17.72
OPER	2F1	-2.22	16.79	-1.71	12.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.18	22.71	-2.45	17.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	23.44	-2.62	18.03	0.00	0.00	0.00	0.00
OPER	5C1	-4.90	21.30	-3.77	16.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.69	2.43	HS 48.58	87.4
HS20	24.48	4.05	HS 80.96	145.7
2F1	54.65	6.64	0.00	99.7
3F1	38.09	4.91	0.00	113.0
4F1	35.63	4.76	0.00	128.5
5C1	24.75	5.24	0.00	209.5

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. 3.200 2F1
3F1
4F1
5C1

Dead Load Moment 0.0
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. 168.0	167.9	-167.4	167.9	-167.4	167.2	-168.0	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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62	
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36
OPER	HS20	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62	
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36
OPER	2F1	40.79 R	31.37	62.62	0.0	0.00	0.00	0.00	
		-31.78 L	-24.44	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.29 R	37.91	66.62	0.0	0.00	0.00	0.00	
		-45.58 L	-35.06	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	45.17 R	34.75	70.62	0.0	0.00	0.00	0.00	
		-49.03 L	-37.71	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.94 L	46.87	5.62	0.0	0.00	0.00	0.00	
		-42.43 L	-32.64	26.27	0.0	0.00	0.00	0.00	0.00

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	3.58	2.65	3.58	HS 53.04	95.5
HS20	4.42	5.97	4.42	5.97	HS 88.40	159.1
2F1	6.83	8.81	6.83	8.81	0.00	102.5
3F1	5.66	6.14	5.66	6.14	0.00	130.1
4F1	6.17	5.71	6.17	5.71	0.00	154.2

5C1	4.57	6.60	4.57	6.60	0.00	183.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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. 3.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	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	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01			
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00		
OPER	HS20	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01			
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00		
OPER	2F1	59.80 R	46.00	65.01	0.0	0.00	0.00	0.00			
		-26.38 L	-20.29	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.32 R	57.94	69.01	0.0	0.00	0.00	0.00			
		-37.84 L	-29.11	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.61 R	58.93	69.01	0.0	0.00	0.00	0.00			
		-40.70 L	-31.31	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.03 L	61.56	8.01	0.0	0.00	0.00	0.00			
		-39.75 L	-30.58	27.05	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	1.92	4.30	1.71	4.79	HS 34.17	61.5
HS20	3.20	7.16	2.85	7.98	HS 56.94	102.5
2F1	4.86	10.57	4.32	11.78	0.00	64.8
3F1	3.86	7.37	3.43	8.22	0.00	78.9
4F1	3.79	6.85	3.37	7.64	0.00	91.1
5C1	3.63	7.01	3.23	7.82	0.00	129.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.300

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	2.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.6	113.2

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	-5.52	22.61	-4.24	17.39	-7.47	19.80	-5.75	15.23
OPER	HS20	-5.52	22.61	-4.24	17.39	-7.47	19.80	-5.75	15.23
OPER	2F1	-3.97	14.14	-3.05	10.88	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.69	-3.26	14.37	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	19.24	-2.62	14.80	0.00	0.00	0.00	0.00
OPER	5C1	-6.91	17.80	-5.31	13.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	3.00	HS 60.08	108.1
HS20	16.00	5.01	HS 100.14	180.2
2F1	30.11	8.00	0.00	120.1
3F1	28.23	6.06	0.00	139.3
4F1	35.15	5.88	0.00	158.9
5C1	17.31	6.36	0.00	254.4

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. 3.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

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. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	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 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	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01	
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00
OPER	HS20	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01	
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00
OPER	2F1	59.80 R	46.00	65.01	0.0	0.00	0.00	0.00	
		-26.38 L	-20.29	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.32 R	57.94	69.01	0.0	0.00	0.00	0.00	
		-37.84 L	-29.11	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.61 R	58.93	69.01	0.0	0.00	0.00	0.00	
		-40.70 L	-31.31	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.03 L	61.56	8.01	0.0	0.00	0.00	0.00	
		-39.75 L	-30.58	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.46	1.78	4.46	HS 35.59	64.1
HS20	2.97	7.44	2.97	7.44	HS 59.31	106.8
2F1	4.50	10.98	4.50	10.98	0.00	67.5
3F1	3.57	7.65	3.57	7.65	0.00	82.2
4F1	3.51	7.11	3.51	7.11	0.00	94.9

5C1	3.36	7.29	3.36	7.29	0.00	134.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 1.4
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	170.9	-170.7	151.7	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.8	-284.5	252.8	-316.5

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	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40			
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00		
OPER	HS20	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40			
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00		
OPER	2F1	70.05 R	53.88	67.40	0.0	0.00	0.00	0.00			
		-20.98 L	-16.14	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.66 R	68.20	67.40	0.0	0.00	0.00	0.00			
		-30.09 L	-23.15	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.70 R	72.84	71.40	0.0	0.00	0.00	0.00			
		-32.37 L	-24.90	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.93 R	69.18	69.40	0.0	0.00	0.00	0.00			
		-37.70 L	-29.00	27.93	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	1.68	5.51	1.50	6.13	HS 29.92	53.9
HS20	2.81	9.19	2.49	10.22	HS 49.87	89.8
2F1	4.07	13.56	3.61	15.09	0.00	54.1
3F1	3.21	9.45	2.85	10.52	0.00	65.6
4F1	3.01	8.79	2.67	9.78	0.00	72.1
5C1	3.17	7.55	2.81	8.40	0.00	112.4

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.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.1	0.0	1.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.8	68.9
OPER	151.3	-117.9	114.8

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	-10.44	18.84	-8.03	14.49	-10.31	16.51	-7.93	12.70
OPER	HS20	-10.44	18.84	-8.03	14.49	-10.31	16.51	-7.93	12.70
OPER	2F1	-6.25	11.43	-4.81	8.79	0.00	0.00	0.00	0.00
OPER	3F1	-7.37	14.69	-5.67	11.30	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.80	-4.80	11.39	0.00	0.00	0.00	0.00
OPER	5C1	-9.22	14.79	-7.09	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.78	3.66	HS 73.13	131.6
HS20	11.30	6.09	HS 121.89	219.4
2F1	18.86	10.05	0.00	150.7
3F1	16.00	7.82	0.00	179.8
4F1	18.90	7.76	0.00	209.4
5C1	12.80	7.76	0.00	310.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400
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		bottom fiber		top fiber		bottom fi	
ber	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
177.2								
OPER	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-
295.3								

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	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40	
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00
OPER	HS20	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40	
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00
OPER	2F1	70.05 R	53.88	67.40	0.0	0.00	0.00	0.00	
		-20.98 L	-16.14	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.66 R	68.20	67.40	0.0	0.00	0.00	0.00	
		-30.09 L	-23.15	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.70 R	72.84	71.40	0.0	0.00	0.00	0.00	
		-32.37 L	-24.90	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.93 R	69.18	69.40	0.0	0.00	0.00	0.00	
		-37.70 L	-29.00	27.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.72	1.56	5.72	HS 31.20	56.2
HS20	2.60	9.53	2.60	9.53	HS 51.99	93.6
2F1	3.76	14.07	3.76	14.07	0.00	56.4
3F1	2.97	9.81	2.97	9.81	0.00	68.4
4F1	2.78	9.12	2.78	9.12	0.00	75.1

5C1	2.93	7.83	2.93	7.83	0.00	117.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
1.6	16.1

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	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	97.81	L	75.24	45.79	0.0	86.88	66.83	59.79		
		-23.00	L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00	
OPER	HS20	97.81	L	75.24	45.79	0.0	86.88	66.83	59.79		
		-23.00	L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00	
OPER	2F1	71.08	L	54.68	49.79	0.0	0.00	0.00	0.00		
		-15.58	L	-11.99	30.66	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	94.19	R	72.45	69.79	0.0	0.00	0.00	0.00		
		-22.35	L	-17.19	28.27	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	97.83	R	75.25	73.79	0.0	0.00	0.00	0.00		
		-24.04	L	-18.49	25.05	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	93.08	L	71.60	8.79	0.0	0.00	0.00	0.00		
		-36.84	L	-28.34	28.66	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	1.74	7.31	1.54	8.12	HS 30.79	55.4
HS20	2.89	12.18	2.57	13.54	HS 51.32	92.4
2F1	3.98	18.37	3.53	20.42	0.00	53.0
3F1	3.01	12.81	2.66	14.24	0.00	61.3
4F1	2.89	11.91	2.57	13.24	0.00	69.3
5C1	3.04	7.77	2.70	8.64	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.	3.500		2F1
			3F1
			4F1
			5C1

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

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-69.8 69.9
OPER	151.3	-116.3 116.4

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	-14.90 14.90	-11.46 11.46		-13.40 13.28	-10.31 10.22			
OPER	HS20	-14.90 14.90	-11.46 11.46		-13.40 13.28	-10.31 10.22			
OPER	2F1	-8.78 8.76	-6.75 6.74		0.00 0.00	0.00 0.00			
OPER	3F1	-10.90 10.87	-8.38 8.36		0.00 0.00	0.00 0.00			
OPER	4F1	-10.30 10.26	-7.92 7.90		0.00 0.00	0.00 0.00			
OPER	5C1	-11.79 11.71	-9.07 9.01		0.00 0.00	0.00 0.00			

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	4.68	4.69	HS 93.65	168.6
HS20	7.80	7.81	HS 156.09	281.0
2F1	13.25	13.30	0.00	198.8
3F1	10.67	10.71	0.00	245.5
4F1	11.30	11.34	0.00	305.0
5C1	9.86	9.94	0.00	394.5

SERVICEABILITY 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 Moment 1.6
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. 178.2	174.7	-160.6	174.7	-160.6	157.0	-178.2	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

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	97.81 L	75.24	45.79	0.0	86.88	66.83	59.79	
		-23.00 L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00
OPER	HS20	97.81 L	75.24	45.79	0.0	86.88	66.83	59.79	
		-23.00 L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00
OPER	2F1	71.08 L	54.68	49.79	0.0	0.00	0.00	0.00	
		-15.58 L	-11.99	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.19 R	72.45	69.79	0.0	0.00	0.00	0.00	
		-22.35 L	-17.19	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.83 R	75.25	73.79	0.0	0.00	0.00	0.00	
		-24.04 L	-18.49	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.08 L	71.60	8.79	0.0	0.00	0.00	0.00	
		-36.84 L	-28.34	28.66	0.0	0.00	0.00	0.00	0.00

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	7.58	1.61	7.58	HS 32.11	57.8
HS20	2.68	12.64	2.68	12.64	HS 53.52	96.3
2F1	3.68	19.06	3.68	19.06	0.00	55.2
3F1	2.78	13.29	2.78	13.29	0.00	63.9
4F1	2.68	12.35	2.68	12.35	0.00	72.2

5C1	2.81	8.06	2.81	8.06	0.00	112.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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
1.4	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	171.2	-170.3	152.0	-189.5
OPER	300.6C	-268.7	268.7	-300.6C	285.4	-283.9	253.4	-315.9

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	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18			
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00		
OPER	HS20	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18			
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00		
OPER	2F1	70.00 L	53.84	52.18	0.0	0.00	0.00	0.00			
		-20.65 R	-15.89	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.57 L	68.13	52.18	0.0	0.00	0.00	0.00			
		-29.63 R	-22.79	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.60 L	72.77	48.18	0.0	0.00	0.00	0.00			
		-31.89 R	-24.53	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.27 L	68.67	50.18	0.0	0.00	0.00	0.00			
		-37.28 R	-28.68	90.93	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	1.69	5.55	1.50	6.17	HS 30.03	54.1
HS20	2.82	9.24	2.50	10.28	HS 50.06	90.1
2F1	4.08	13.75	3.62	15.29	0.00	54.3
3F1	3.22	9.58	2.86	10.66	0.00	65.8
4F1	3.02	8.90	2.68	9.91	0.00	72.3
5C1	3.20	7.61	2.84	8.47	0.00	113.5

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.	3.600		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	-18.83	10.43	-14.48	8.02	-16.63	10.20	-12.80	7.84
OPER	HS20	-18.83	10.43	-14.48	8.02	-16.63	10.20	-12.80	7.84
OPER	2F1	-11.45	6.24	-8.81	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.72	7.35	-11.32	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.83	6.23	-11.41	4.79	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.18	-11.38	7.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.80	HS 73.01	131.4
HS20	6.08	11.33	HS 121.68	219.0
2F1	10.01	18.95	0.00	150.1
3F1	7.78	16.07	0.00	179.0
4F1	7.72	18.97	0.00	208.5
5C1	7.74	12.87	0.00	309.6

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. 3.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
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. 176.8	173.7	-161.5	173.7	-161.5	158.5	-176.8	158.5	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

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	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18	
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00
OPER	HS20	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18	
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00
OPER	2F1	70.00 L	53.84	52.18	0.0	0.00	0.00	0.00	
		-20.65 R	-15.89	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.57 L	68.13	52.18	0.0	0.00	0.00	0.00	
		-29.63 R	-22.79	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.60 L	72.77	48.18	0.0	0.00	0.00	0.00	
		-31.89 R	-24.53	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.27 L	68.67	50.18	0.0	0.00	0.00	0.00	
		-37.28 R	-28.68	90.93	0.0	0.00	0.00	0.00	0.00

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	5.76	1.57	5.76	HS 31.31	56.4
HS20	2.61	9.59	2.61	9.59	HS 52.18	93.9
2F1	3.77	14.27	3.77	14.27	0.00	56.6
3F1	2.98	9.94	2.98	9.94	0.00	68.6
4F1	2.79	9.24	2.79	9.24	0.00	75.4

5C1	2.96	7.90	2.96	7.90	0.00	118.4
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 0.8
Superimposed Dead Load Moment 8.2

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	175.0	-166.6	155.8	-185.8
OPER	300.6C	-268.7	268.7	-300.6C	291.6	-277.6	259.7	-309.6

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	0.00	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32		
OPER	HS20	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	0.00	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32		
OPER	2F1	59.69 L	45.91	54.58	0.0	0.00	0.00	0.00	0.00	
		-25.96 R	-19.97	88.93	0.0	0.00	0.00	0.00		
OPER	3F1	75.16 L	57.82	50.58	0.0	0.00	0.00	0.00	0.00	
		-37.24 R	-28.65	91.32	0.0	0.00	0.00	0.00		
OPER	4F1	76.44 L	58.80	50.58	0.0	0.00	0.00	0.00	0.00	
		-40.07 R	-30.82	94.53	0.0	0.00	0.00	0.00		
OPER	5C1	78.61 R	60.47	111.58	0.0	0.00	0.00	0.00	0.00	
		-39.25 R	-30.19	92.53	0.0	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.93	4.32	1.72	4.81	HS 34.39	61.9
HS20	3.22	7.19	2.87	8.02	HS 57.32	103.2
2F1	4.89	10.70	4.35	11.93	0.00	65.3
3F1	3.88	7.46	3.45	8.31	0.00	79.5
4F1	3.82	6.93	3.40	7.73	0.00	91.7
5C1	3.71	7.07	3.30	7.89	0.00	132.1

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	-3.1	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	-22.60	5.50	-17.38	4.23	-19.92	7.36	-15.32	5.66
OPER	HS20	-22.60	5.50	-17.38	4.23	-19.92	7.36	-15.32	5.66
OPER	2F1	-14.16	3.96	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.72	4.23	-14.40	3.25	0.00	0.00	0.00	0.00
OPER	4F1	-19.27	3.46	-14.82	2.66	0.00	0.00	0.00	0.00
OPER	5C1	-17.81	6.90	-13.70	5.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.00	9.77	HS 59.97	108.0
HS20	5.00	16.28	HS 99.96	179.9
2F1	7.97	30.25	0.00	119.6
3F1	6.03	28.33	0.00	138.8
4F1	5.86	34.63	0.00	158.3
5C1	6.34	17.36	0.00	253.7

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. 3.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.2

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. 173.0	171.2	-164.0	171.2	-164.0	162.2	-173.0	162.2	-
OPER 288.4	279.4	-279.4	279.4	-279.4	270.4	-288.4	270.4	-

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	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00
OPER	HS20	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00
OPER	2F1	59.69 L	45.91	54.58	0.0	0.00	0.00	0.00	
		-25.96 R	-19.97	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.16 L	57.82	50.58	0.0	0.00	0.00	0.00	
		-37.24 R	-28.65	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.44 L	58.80	50.58	0.0	0.00	0.00	0.00	
		-40.07 R	-30.82	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.61 R	60.47	111.58	0.0	0.00	0.00	0.00	
		-39.25 R	-30.19	92.53	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.48	1.79	4.48	HS 35.82	64.5
HS20	2.98	7.47	2.98	7.47	HS 59.70	107.5
2F1	4.53	11.11	4.53	11.11	0.00	68.0
3F1	3.60	7.74	3.60	7.74	0.00	82.7
4F1	3.54	7.20	3.54	7.20	0.00	95.5

5C1	3.44	7.35	3.44	7.35	0.00	137.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 -1.0

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	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97			
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15		
OPER	HS20	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97			
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15		
OPER	2F1	40.63 L	31.26	56.97	0.0	0.00	0.00	0.00			
		-31.26 R	-24.05	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.05 L	37.73	52.97	0.0	0.00	0.00	0.00			
		-44.85 R	-34.50	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.92 L	34.55	48.97	0.0	0.00	0.00	0.00			
		-48.26 R	-37.12	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.74 R	45.18	113.97	0.0	0.00	0.00	0.00			
		-41.74 R	-32.11	93.32	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	2.88	3.45	2.58	3.87	HS 51.54	92.8
HS20	4.80	5.75	4.30	6.44	HS 85.90	154.6
2F1	7.43	8.56	6.64	9.58	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.5
4F1	6.72	5.54	6.01	6.21	0.00	149.7
5C1	5.14	6.41	4.59	7.18	0.00	183.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

3.800

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	72.9
OPER	151.3	-111.3	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	-27.59	3.19	-21.22	2.45	-23.15	4.84	-17.81	3.72
OPER	HS20	-27.59	3.19	-21.22	2.45	-23.15	4.84	-17.81	3.72
OPER	2F1	-16.81	2.26	-12.93	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-22.74	3.24	-17.49	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.46	3.46	-18.05	2.66	0.00	0.00	0.00	0.00
OPER	5C1	-21.40	4.92	-16.47	3.78	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.42	15.05	HS 48.42	87.2
HS20	4.03	25.08	HS 80.71	145.3
2F1	6.62	53.79	0.00	99.3
3F1	4.89	37.51	0.00	112.6
4F1	4.74	35.10	0.00	128.1
5C1	5.20	24.69	0.00	208.0

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. 3.800 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	
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	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97	
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15
OPER	HS20	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97	
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15
OPER	2F1	40.63 L	31.26	56.97	0.0	0.00	0.00	0.00	
		-31.26 R	-24.05	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.05 L	37.73	52.97	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.92 L	34.55	48.97	0.0	0.00	0.00	0.00	
		-48.26 R	-37.12	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.74 R	45.18	113.97	0.0	0.00	0.00	0.00	
		-41.74 R	-32.11	93.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.59	96.5
HS20	4.47	5.98	4.47	5.98	HS 89.32	160.8
2F1	6.91	8.90	6.91	8.90	0.00	103.6
3F1	5.72	6.20	5.72	6.20	0.00	131.5
4F1	6.24	5.77	6.24	5.77	0.00	155.7

5C1	4.78	6.67	4.78	6.67	0.00	191.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.4
Superimposed Dead Load Moment -13.8

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	189.5	-152.1	170.3	-171.3
OPER	300.6C	-268.7	268.7	-300.6C	315.8	-253.5	283.8	-285.5

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	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36			
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79		
OPER	HS20	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36			
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79		
OPER	2F1	14.35 L	11.04	59.36	0.0	0.00	0.00	0.00			
		-36.56 R	-28.13	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.06 R	10.81	115.23	0.0	0.00	0.00	0.00			
		-52.46 R	-40.35	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.94 R	11.50	119.23	0.0	0.00	0.00	0.00			
		-56.45 R	-43.42	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.85 R	22.96	116.36	0.0	0.00	0.00	0.00			
		-46.15 R	-35.50	95.71	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	7.19	2.50	6.46	2.82	HS 50.01	90.0
HS20	11.98	4.17	10.77	4.69	HS 83.35	150.0
2F1	22.01	6.93	19.78	7.81	0.00	104.0
3F1	22.47	4.83	20.19	5.44	0.00	111.1
4F1	21.13	4.49	18.99	5.06	0.00	121.3
5C1	10.58	5.49	9.51	6.19	0.00	219.7

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 (-) 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	73.8
OPER	151.3	-109.7	123.0

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	-32.76	3.33	-25.20	2.56	-26.23	3.50	-20.17	2.69
OPER	HS20	-32.76	3.33	-25.20	2.56	-26.23	3.50	-20.17	2.69
OPER	2F1	-19.28	2.26	-14.83	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-26.62	3.24	-20.48	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-27.43	3.48	-21.10	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-25.02	3.27	-19.25	2.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	21.08	HS 40.19	72.3
HS20	3.35	35.13	HS 66.98	120.6
2F1	5.69	54.51	0.00	85.3
3F1	4.12	38.01	0.00	94.8
4F1	4.00	35.33	0.00	108.0
5C1	4.39	37.60	0.00	175.4

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.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-13.8

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. 158.5	161.6	-173.7	161.6	-173.7	176.7	-158.5	176.7	-
OPER 264.2	279.4	-279.4	279.4	-279.4	294.6	-264.2	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	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36	
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79
OPER	HS20	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36	
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79
OPER	2F1	14.35 L	11.04	59.36	0.0	0.00	0.00	0.00	
		-36.56 R	-28.13	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.06 R	10.81	115.23	0.0	0.00	0.00	0.00	
		-52.46 R	-40.35	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.94 R	11.50	119.23	0.0	0.00	0.00	0.00	
		-56.45 R	-43.42	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.85 R	22.96	116.36	0.0	0.00	0.00	0.00	
		-46.15 R	-35.50	95.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.71	2.61	6.71	2.61	HS 52.13	93.8
HS20	11.18	4.34	11.18	4.34	HS 86.88	156.4
2F1	20.53	7.23	20.53	7.23	0.00	108.4
3F1	20.95	5.04	20.95	5.04	0.00	115.9
4F1	19.71	4.68	19.71	4.68	0.00	126.4

5C1	9.87	5.73	9.87	5.73	0.00	229.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 Moment Superimposed Dead Load Moment
-3.0 -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	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18		81.32	
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18		81.32	
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00		0.00	
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00		0.00	
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00		0.00	
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00		0.00	
		-66.52 L	-51.17	66.93	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	11.65	1.34	10.54	1.52	HS 26.74	48.1
HS20	19.42	2.23	17.56	2.53	HS 44.57	80.2
2F1	29.25	5.62	26.45	6.38	0.00	84.3
3F1	20.39	3.44	18.44	3.91	0.00	79.2
4F1	18.96	2.95	17.14	3.35	0.00	79.7
5C1	23.80	3.54	21.51	4.02	0.00	141.7

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.	4.000		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	64.9
OPER	151.3	-108.1	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	-32.76	37.61	-25.20	28.93	-26.23	29.00	-20.17	22.31
OPER	HS20	-32.76	37.61	-25.20	28.93	-26.23	29.00	-20.17	22.31
OPER	2F1	-19.28	21.47	-14.83	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.62	30.18	-20.48	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.43	31.72	-21.10	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-25.02	28.44	-19.25	21.88	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.72	1.73	HS 34.47	62.1
HS20	2.87	2.88	HS 57.45	103.4
2F1	5.03	5.04	0.00	75.5
3F1	3.58	3.58	0.00	82.3
4F1	3.41	3.41	0.00	92.0
5C1	3.80	3.80	0.00	151.9

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. 4.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00	
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00	
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00	
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00	
		-66.52 L	-51.17	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.91	1.40	10.91	1.40	HS 27.96	50.3
HS20	18.19	2.33	18.19	2.33	HS 46.60	83.9
2F1	27.39	5.88	27.39	5.88	0.00	88.1
3F1	19.10	3.60	19.10	3.60	0.00	82.8
4F1	17.75	3.09	17.75	3.09	0.00	83.4

5C1	22.28	3.70	22.28	3.70	0.00	148.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	97.990

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.0
Superimposed Dead Load Moment -30.0

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	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00			
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00			
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00			
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00			
		-66.52 L	-51.17	66.93	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	11.65	1.34	10.54	1.52	HS 26.74	48.1
HS20	19.42	2.23	17.56	2.53	HS 44.57	80.2
2F1	29.25	5.62	26.45	6.38	0.00	84.3
3F1	20.39	3.44	18.44	3.91	0.00	79.2
4F1	18.96	2.95	17.14	3.35	0.00	79.7
5C1	23.80	3.54	21.51	4.02	0.00	141.7

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.5	7.5

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.8	64.9
OPER	151.3	-108.1	108.2

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	-37.62	37.61	-28.94	28.93	-29.03	29.00	-22.33	22.31
OPER	HS20	-37.62	37.61	-28.94	28.93	-29.03	29.00	-22.33	22.31
OPER	2F1	-21.47	21.47	-16.52	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.19	30.18	-23.22	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.73	31.72	-24.41	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-28.47	28.44	-21.90	21.88	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.72	1.73	HS 34.47	62.1
HS20	2.87	2.88	HS 57.45	103.4
2F1	5.03	5.04	0.00	75.5
3F1	3.58	3.58	0.00	82.3
4F1	3.41	3.41	0.00	92.0
5C1	3.80	3.80	0.00	151.9

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.0	-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. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00	
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00	
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00	
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00	
		-66.52 L	-51.17	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.91	1.40	10.91	1.40	HS 27.96	50.3
HS20	18.19	2.33	18.19	2.33	HS 46.60	83.9
2F1	27.39	5.88	27.39	5.88	0.00	88.1
3F1	19.10	3.60	19.10	3.60	0.00	82.8
4F1	17.75	3.09	17.75	3.09	0.00	83.4

5C1	22.28	3.70	22.28	3.70	0.00	148.1
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.032

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-1.4	-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	189.6	-152.0	170.4	-171.2
OPER	300.6C	-268.7	268.7	-300.6C	316.0	-253.3	284.0	-285.3

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	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14			
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71		
OPER	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14			
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71		
OPER	2F1	14.38 R	11.06	84.14	0.0	0.00	0.00	0.00			
		-36.62 L	-28.17	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.29 L	10.99	28.27	0.0	0.00	0.00	0.00			
		-52.53 L	-40.41	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.19 L	11.68	24.27	0.0	0.00	0.00	0.00			
		-56.52 L	-43.48	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	30.08 L	23.14	27.14	0.0	0.00	0.00	0.00			
		-46.23 L	-35.56	47.79	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	7.09	2.49	6.38	2.81	HS 49.90	89.8
HS20	11.82	4.16	10.63	4.68	HS 83.17	149.7
2F1	21.98	6.92	19.76	7.79	0.00	103.8
3F1	22.12	4.82	19.88	5.43	0.00	110.9
4F1	20.80	4.48	18.70	5.05	0.00	121.0
5C1	10.51	5.48	9.44	6.17	0.00	219.2

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	6.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.8	65.9
OPER	151.3	-123.0	109.8

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	-3.17	32.74	-2.44	25.19	-3.50	26.19	-2.69	20.15
OPER	HS20	-3.17	32.74	-2.44	25.19	-3.50	26.19	-2.69	20.15
OPER	2F1	-2.22	19.28	-1.71	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	26.61	-2.45	20.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	27.41	-2.62	21.09	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	25.00	-2.49	19.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.07	2.01	HS 40.24	72.4
HS20	35.12	3.35	HS 67.06	120.7
2F1	55.38	5.70	0.00	85.4
3F1	38.60	4.13	0.00	94.9
4F1	36.11	4.01	0.00	108.1
5C1	38.05	4.39	0.00	175.7

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. 4.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.4 -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. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14	
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71
OPER	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14	
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71
OPER	2F1	14.38 R	11.06	84.14	0.0	0.00	0.00	0.00	
		-36.62 L	-28.17	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.29 L	10.99	28.27	0.0	0.00	0.00	0.00	
		-52.53 L	-40.41	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.19 L	11.68	24.27	0.0	0.00	0.00	0.00	
		-56.52 L	-43.48	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	30.08 L	23.14	27.14	0.0	0.00	0.00	0.00	
		-46.23 L	-35.56	47.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.62	2.60	6.62	2.60	HS 52.02	93.6
HS20	11.03	4.34	11.03	4.34	HS 86.70	156.1
2F1	20.50	7.21	20.50	7.21	0.00	108.2
3F1	20.63	5.03	20.63	5.03	0.00	115.6
4F1	19.41	4.67	19.41	4.67	0.00	126.1

5C1	9.80	5.71	9.80	5.71	0.00	228.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.032

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 Moment Superimposed Dead Load Moment
-0.2 -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.	180.4C	-161.2	161.2	-180.4C	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

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	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53			
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35		
OPER	HS20	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53			
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35		
OPER	2F1	40.65 R	31.27	86.53	0.0	0.00	0.00	0.00			
		-31.30 L	-24.08	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.07 R	37.75	90.53	0.0	0.00	0.00	0.00			
		-44.90 L	-34.54	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.94 R	34.57	94.53	0.0	0.00	0.00	0.00			
		-48.32 L	-37.17	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.90 L	45.31	29.53	0.0	0.00	0.00	0.00			
		-41.79 L	-32.15	50.18	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	2.88	3.44	2.58	3.86	HS 51.60	92.9
HS20	4.81	5.74	4.30	6.43	HS 86.00	154.8
2F1	7.43	8.53	6.65	9.56	0.00	99.7
3F1	6.16	5.95	5.51	6.66	0.00	126.6
4F1	6.72	5.53	6.01	6.19	0.00	149.3
5C1	5.13	6.39	4.59	7.16	0.00	183.5

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.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.5	0.0	4.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.8
OPER	151.3	-121.3	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	-3.17	27.57	-2.44	21.21	-4.88	23.12	-3.75	17.78
OPER	HS20	-3.17	27.57	-2.44	21.21	-4.88	23.12	-3.75	17.78
OPER	2F1	-2.22	16.80	-1.71	12.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	22.73	-2.45	17.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	23.45	-2.62	18.04	0.00	0.00	0.00	0.00
OPER	5C1	-4.89	21.39	-3.76	16.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.92	2.42	HS 48.49	87.3
HS20	24.86	4.04	HS 80.82	145.5
2F1	54.65	6.63	0.00	99.5
3F1	38.09	4.90	0.00	112.7
4F1	35.63	4.75	0.00	128.3
5C1	24.81	5.21	0.00	208.4

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.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-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. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

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	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53	
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35
OPER	HS20	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53	
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35
OPER	2F1	40.65 R	31.27	86.53	0.0	0.00	0.00	0.00	
		-31.30 L	-24.08	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.07 R	37.75	90.53	0.0	0.00	0.00	0.00	
		-44.90 L	-34.54	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.94 R	34.57	94.53	0.0	0.00	0.00	0.00	
		-48.32 L	-37.17	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.90 L	45.31	29.53	0.0	0.00	0.00	0.00	
		-41.79 L	-32.15	50.18	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.58	2.68	3.58	HS 53.65	96.6
HS20	4.47	5.97	4.47	5.97	HS 89.42	161.0
2F1	6.91	8.88	6.91	8.88	0.00	103.7
3F1	5.72	6.19	5.72	6.19	0.00	131.7
4F1	6.25	5.75	6.25	5.75	0.00	155.3

5C1	4.77	6.65	4.77	6.65	0.00	190.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.032

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 7.7

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	175.3	-166.2	156.2	-185.4
OPER	300.6C	-268.7	268.7	-300.6C	292.2	-277.0	260.3	-309.0

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	0.00	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18		
OPER	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	0.00	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18		
OPER	2F1	59.68 R	45.91	88.93	0.0	0.00	0.00	0.00	0.00	
		-25.98 L	-19.99	54.58	0.0	0.00	0.00	0.00		
OPER	3F1	75.15 R	57.80	92.93	0.0	0.00	0.00	0.00	0.00	
		-37.27 L	-28.67	52.18	0.0	0.00	0.00	0.00		
OPER	4F1	76.43 R	58.79	92.93	0.0	0.00	0.00	0.00	0.00	
		-40.11 L	-30.85	48.97	0.0	0.00	0.00	0.00		
OPER	5C1	78.69 L	60.53	31.93	0.0	0.00	0.00	0.00	0.00	
		-39.23 L	-30.18	50.97	0.0	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	1.93	4.30	1.72	4.80	HS 34.47	62.1
HS20	3.23	7.17	2.87	8.00	HS 57.45	103.4
2F1	4.90	10.66	4.36	11.89	0.00	65.4
3F1	3.89	7.43	3.46	8.29	0.00	79.7
4F1	3.82	6.91	3.40	7.70	0.00	91.9
5C1	3.71	7.06	3.31	7.88	0.00	132.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.300

HS20 HS20

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	-5.50	22.59	-4.23	17.38	-7.40	19.88	-5.69	15.29
OPER	HS20	-5.50	22.59	-4.23	17.38	-7.40	19.88	-5.69	15.29
OPER	2F1	-3.97	14.15	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.70	-3.26	14.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	19.25	-2.62	14.81	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.80	-5.30	13.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.71	3.00	HS 60.03	108.1
HS20	16.18	5.00	HS 100.06	180.1
2F1	30.19	7.99	0.00	119.8
3F1	28.28	6.04	0.00	139.0
4F1	35.15	5.87	0.00	158.5
5C1	17.36	6.35	0.00	253.9

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 0.7
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. 172.7	171.0	-164.3	171.0	-164.3	162.6	-172.7	162.6	-
OPER 287.8	279.4	-279.4	279.4	-279.4	271.0	-287.8	271.0	-

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	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00
OPER	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00
OPER	2F1	59.68 R	45.91	88.93	0.0	0.00	0.00	0.00	
		-25.98 L	-19.99	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.15 R	57.80	92.93	0.0	0.00	0.00	0.00	
		-37.27 L	-28.67	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.43 R	58.79	92.93	0.0	0.00	0.00	0.00	
		-40.11 L	-30.85	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.69 L	60.53	31.93	0.0	0.00	0.00	0.00	
		-39.23 L	-30.18	50.97	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.47	1.79	4.47	HS 35.90	64.6
HS20	2.99	7.45	2.99	7.45	HS 59.83	107.7
2F1	4.54	11.08	4.54	11.08	0.00	68.1
3F1	3.61	7.72	3.61	7.72	0.00	82.9
4F1	3.55	7.18	3.55	7.18	0.00	95.7

5C1	3.44	7.34	3.44	7.34	0.00	137.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.032

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
1.3	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.	180.4C	-161.2	161.2	-180.4C	171.7	-169.9	152.5	-189.1
OPER	300.6C	-268.7	268.7	-300.6C	286.2	-283.1	254.2	-315.1

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	101.25	R	77.89	109.32	0.0	81.33	62.56	81.32		
		-30.72	L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00	
OPER	HS20	101.25	R	77.89	109.32	0.0	81.33	62.56	81.32		
		-30.72	L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00	
OPER	2F1	69.96	R	53.81	91.32	0.0	0.00	0.00	0.00		
		-20.67	L	-15.90	54.58	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	88.52	R	68.09	91.32	0.0	0.00	0.00	0.00		
		-29.65	L	-22.81	52.18	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.55	R	72.73	95.32	0.0	0.00	0.00	0.00		
		-31.90	L	-24.54	48.97	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	89.26	R	68.67	93.32	0.0	0.00	0.00	0.00		
		-37.30	L	-28.69	51.84	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	1.70	5.53	1.51	6.15	HS 30.13	54.2
HS20	2.83	9.22	2.51	10.26	HS 50.21	90.4
2F1	4.09	13.70	3.63	15.25	0.00	54.5
3F1	3.23	9.55	2.87	10.63	0.00	66.0
4F1	3.03	8.88	2.69	9.88	0.00	72.6
5C1	3.21	7.59	2.85	8.45	0.00	113.9

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.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.2	0.0	1.6
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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	-10.43	18.82	-8.02	14.48	-10.24	16.59	-7.88	12.76
OPER	HS20	-10.43	18.82	-8.02	14.48	-10.24	16.59	-7.88	12.76
OPER	2F1	-6.25	11.44	-4.80	8.80	0.00	0.00	0.00	0.00
OPER	3F1	-7.36	14.70	-5.66	11.31	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.81	-4.80	11.40	0.00	0.00	0.00	0.00
OPER	5C1	-9.20	14.80	-7.08	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.80	3.65	HS 73.09	131.6
HS20	11.32	6.09	HS 121.81	219.3
2F1	18.91	10.02	0.00	150.3
3F1	16.04	7.80	0.00	179.3
4F1	18.93	7.74	0.00	208.9
5C1	12.83	7.75	0.00	309.9

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. 4.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
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. 176.3	173.4	-161.9	173.4	-161.9	159.0	-176.3	159.0	-
OPER 293.9	279.4	-279.4	279.4	-279.4	264.9	-293.9	264.9	-

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	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32	
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00
OPER	HS20	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32	
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00
OPER	2F1	69.96 R	53.81	91.32	0.0	0.00	0.00	0.00	
		-20.67 L	-15.90	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.52 R	68.09	91.32	0.0	0.00	0.00	0.00	
		-29.65 L	-22.81	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.55 R	72.73	95.32	0.0	0.00	0.00	0.00	
		-31.90 L	-24.54	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.26 R	68.67	93.32	0.0	0.00	0.00	0.00	
		-37.30 L	-28.69	51.84	0.0	0.00	0.00	0.00	0.00

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	5.74	1.57	5.74	HS 31.40	56.5
HS20	2.62	9.57	2.62	9.57	HS 52.33	94.2
2F1	3.79	14.22	3.79	14.22	0.00	56.8
3F1	2.99	9.91	2.99	9.91	0.00	68.8
4F1	2.80	9.21	2.80	9.21	0.00	75.7

5C1	2.97	7.88	2.97	7.88	0.00	118.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.032

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.52		107.0

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	11.96	1.00	33000.	73.86	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 1.5
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	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71			
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00		
OPER	HS20	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71			
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00		
OPER	2F1	71.01 L	54.63	73.71	0.0	0.00	0.00	0.00			
		-15.35 L	-11.81	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.09 R	72.37	93.71	0.0	0.00	0.00	0.00			
		-22.02 L	-16.94	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	97.73 R	75.17	97.71	0.0	0.00	0.00	0.00			
		-23.69 L	-18.23	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	92.36 L	71.05	32.71	0.0	0.00	0.00	0.00			
		-36.58 L	-28.14	53.45	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	7.21	1.55	8.02	HS 30.94	55.7
HS20	2.90	12.02	2.58	13.36	HS 51.56	92.8
2F1	4.00	18.59	3.55	20.67	0.00	53.2
3F1	3.02	12.96	2.68	14.41	0.00	61.6
4F1	2.91	12.04	2.58	13.39	0.00	69.6
5C1	3.08	7.80	2.73	8.68	0.00	109.1

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.	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	-14.89	14.89	-11.46	11.46	-13.33	13.36	-10.25	10.28
OPER	HS20	-14.89	14.89	-11.46	11.46	-13.33	13.36	-10.25	10.28
OPER	2F1	-8.77	8.77	-6.74	6.74	0.00	0.00	0.00	0.00
OPER	3F1	-10.89	10.88	-8.37	8.37	0.00	0.00	0.00	0.00
OPER	4F1	-10.28	10.28	-7.91	7.91	0.00	0.00	0.00	0.00
OPER	5C1	-11.76	11.76	-9.05	9.05	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.68	HS 93.68	168.6
HS20	7.82	7.81	HS 156.14	281.0
2F1	13.29	13.26	0.00	198.9
3F1	10.70	10.68	0.00	245.7
4F1	11.33	11.31	0.00	305.4
5C1	9.90	9.89	0.00	395.5

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 1.5
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	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71	
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00
OPER	HS20	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71	
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00
OPER	2F1	71.01 L	54.63	73.71	0.0	0.00	0.00	0.00	
		-15.35 L	-11.81	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.09 R	72.37	93.71	0.0	0.00	0.00	0.00	
		-22.02 L	-16.94	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.73 R	75.17	97.71	0.0	0.00	0.00	0.00	
		-23.69 L	-18.23	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	92.36 L	71.05	32.71	0.0	0.00	0.00	0.00	
		-36.58 L	-28.14	53.45	0.0	0.00	0.00	0.00	0.00

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	7.48	1.61	7.48	HS 32.26	58.1
HS20	2.69	12.47	2.69	12.47	HS 53.76	96.8
2F1	3.70	19.29	3.70	19.29	0.00	55.5
3F1	2.79	13.44	2.79	13.44	0.00	64.2
4F1	2.69	12.49	2.69	12.49	0.00	72.6

5C1	2.85	8.09	2.85	8.09	0.00	113.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 Moment 1.3
Superimposed Dead Load Moment 13.4

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	171.6	-170.0	152.4	-189.2
OPER	300.6C	-268.7	268.7	-300.6C	286.0	-283.3	254.0	-315.3

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	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10			
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00		
OPER	HS20	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10			
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00		
OPER	2F1	69.95 L	53.81	76.10	0.0	0.00	0.00	0.00			
		-20.64 R	-15.88	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 L	68.09	76.10	0.0	0.00	0.00	0.00			
		-29.62 R	-22.78	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.54 L	72.72	72.10	0.0	0.00	0.00	0.00			
		-31.87 R	-24.51	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.22 L	68.63	74.10	0.0	0.00	0.00	0.00			
		-37.15 R	-28.58	114.84	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	1.70	5.54	1.50	6.16	HS 30.10	54.2
HS20	2.83	9.23	2.51	10.27	HS 50.17	90.3
2F1	4.09	13.72	3.63	15.27	0.00	54.5
3F1	3.23	9.57	2.87	10.65	0.00	66.0
4F1	3.03	8.89	2.69	9.89	0.00	72.5
5C1	3.20	7.63	2.85	8.49	0.00	113.9

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.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	0.0
-0.1	-1.5		

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	-18.82	10.43	-14.48	8.02	-16.56	10.27	-12.74	7.90
OPER	HS20	-18.82	10.43	-14.48	8.02	-16.56	10.27	-12.74	7.90
OPER	2F1	-11.44	6.24	-8.80	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.70	7.36	-11.31	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.82	6.24	-11.40	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.20	-11.38	7.08	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.66	6.79	HS 73.14	131.7
HS20	6.09	11.32	HS 121.90	219.4
2F1	10.03	18.90	0.00	150.4
3F1	7.80	16.03	0.00	179.4
4F1	7.74	18.92	0.00	209.1
5C1	7.75	12.82	0.00	310.1

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. 4.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

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. 176.4	173.5	-161.8	173.5	-161.8	158.8	-176.4	158.8	-
OPER 294.1	279.4	-279.4	279.4	-279.4	264.7	-294.1	264.7	-

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	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23
OPER	HS20	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23
OPER	2F1	69.95 L	53.81	76.10	0.0	0.00	0.00	0.00
		-20.64 R	-15.88	112.84	0.0	0.00	0.00	0.00
OPER	3F1	88.52 L	68.09	76.10	0.0	0.00	0.00	0.00
		-29.62 R	-22.78	115.23	0.0	0.00	0.00	0.00
OPER	4F1	94.54 L	72.72	72.10	0.0	0.00	0.00	0.00
		-31.87 R	-24.51	118.45	0.0	0.00	0.00	0.00
OPER	5C1	89.22 L	68.63	74.10	0.0	0.00	0.00	0.00
		-37.15 R	-28.58	114.84	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	5.75	1.57	5.75	HS 31.38	56.5
HS20	2.62	9.58	2.62	9.58	HS 52.30	94.1
2F1	3.78	14.24	3.78	14.24	0.00	56.8
3F1	2.99	9.93	2.99	9.93	0.00	68.8
4F1	2.80	9.23	2.80	9.23	0.00	75.6

5C1	2.97	7.91	2.97	7.91	0.00	118.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 8.0

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	175.1	-166.5	155.9	-185.7
OPER	300.6C	-268.7	268.7	-300.6C	291.8	-277.4	259.9	-309.4

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	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49			
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00		
OPER	HS20	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49			
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00		
OPER	2F1	59.67 L	45.90	78.49	0.0	0.00	0.00	0.00			
		-25.95 R	-19.96	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.13 L	57.80	74.49	0.0	0.00	0.00	0.00			
		-37.23 R	-28.64	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.41 L	58.78	74.49	0.0	0.00	0.00	0.00			
		-40.07 R	-30.82	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.59 R	60.46	135.49	0.0	0.00	0.00	0.00			
		-39.20 R	-30.15	116.45	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	1.93	4.31	1.72	4.81	HS 34.42	62.0
HS20	3.22	7.19	2.87	8.02	HS 57.37	103.3
2F1	4.89	10.69	4.36	11.92	0.00	65.3
3F1	3.88	7.45	3.46	8.31	0.00	79.5
4F1	3.82	6.93	3.40	7.72	0.00	91.8
5C1	3.71	7.08	3.31	7.89	0.00	132.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.3	-3.0	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)
INV.	90.8	-67.9	71.8
OPER	151.3	-113.1	119.6

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	-22.59	5.50	-17.38	4.23	-19.85	7.43	-15.27	5.72
OPER	HS20	-22.59	5.50	-17.38	4.23	-19.85	7.43	-15.27	5.72
OPER	2F1	-14.15	3.96	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.70	4.23	-14.39	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.25	3.41	-14.81	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-17.80	6.90	-13.69	5.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.00	9.66	HS 60.08	108.1
HS20	5.01	16.10	HS 100.13	180.2
2F1	7.99	30.18	0.00	119.9
3F1	6.05	28.26	0.00	139.1
4F1	5.88	35.09	0.00	158.6
5C1	6.35	17.35	0.00	254.1

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. 4.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.0

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. 172.9	171.2	-164.1	171.2	-164.1	162.4	-172.9	162.4	-
OPER 288.2	279.4	-279.4	279.4	-279.4	270.6	-288.2	270.6	-

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	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49	
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00
OPER	HS20	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49	
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00
OPER	2F1	59.67 L	45.90	78.49	0.0	0.00	0.00	0.00	
		-25.95 R	-19.96	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.13 L	57.80	74.49	0.0	0.00	0.00	0.00	
		-37.23 R	-28.64	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.41 L	58.78	74.49	0.0	0.00	0.00	0.00	
		-40.07 R	-30.82	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.59 R	60.46	135.49	0.0	0.00	0.00	0.00	
		-39.20 R	-30.15	116.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.48	1.79	4.48	HS 35.85	64.5
HS20	2.99	7.47	2.99	7.47	HS 59.75	107.5
2F1	4.53	11.10	4.53	11.10	0.00	68.0
3F1	3.60	7.74	3.60	7.74	0.00	82.8
4F1	3.54	7.19	3.54	7.19	0.00	95.6

5C1	3.44	7.35	3.44	7.35	0.00	137.7
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 -0.8

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	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-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	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88			
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07		
OPER	HS20	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88			
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07		
OPER	2F1	40.63 L	31.26	80.88	0.0	0.00	0.00	0.00	0.00		
		-31.26 R	-24.05	112.84	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	49.06 L	37.74	76.88	0.0	0.00	0.00	0.00	0.00		
		-44.85 R	-34.50	115.23	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.93 L	34.56	72.88	0.0	0.00	0.00	0.00	0.00		
		-48.26 R	-37.13	118.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.75 R	45.19	137.88	0.0	0.00	0.00	0.00	0.00		
		-41.75 R	-32.11	117.23	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	2.88	3.45	2.58	3.87	HS 51.50	92.7
HS20	4.80	5.76	4.29	6.45	HS 85.83	154.5
2F1	7.42	8.56	6.64	9.59	0.00	99.5
3F1	6.15	5.97	5.50	6.68	0.00	126.4
4F1	6.71	5.55	6.00	6.21	0.00	149.8
5C1	5.13	6.41	4.59	7.18	0.00	183.5

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
-0.4	-4.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.8
OPER	151.3	-111.5	121.3

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	-27.57	3.17	-21.21	2.44	-23.09	4.91	-17.76	3.78
OPER	HS20	-27.57	3.17	-21.21	2.44	-23.09	4.91	-17.76	3.78
OPER	2F1	-16.80	2.22	-12.93	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.73	3.19	-17.48	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.45	3.41	-18.04	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.39	4.89	-16.46	3.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.43	14.81	HS 48.52	87.3
HS20	4.04	24.69	HS 80.87	145.6
2F1	6.64	54.54	0.00	99.5
3F1	4.91	38.02	0.00	112.8
4F1	4.75	35.56	0.00	128.3
5C1	5.21	24.78	0.00	208.5

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. 4.800 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

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. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

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	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88	
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07
OPER	HS20	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88	
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07
OPER	2F1	40.63 L	31.26	80.88	0.0	0.00	0.00	0.00	
		-31.26 R	-24.05	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.06 L	37.74	76.88	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.93 L	34.56	72.88	0.0	0.00	0.00	0.00	
		-48.26 R	-37.13	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.75 R	45.19	137.88	0.0	0.00	0.00	0.00	
		-41.75 R	-32.11	117.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.55	96.4
HS20	4.46	5.99	4.46	5.99	HS 89.25	160.6
2F1	6.90	8.91	6.90	8.91	0.00	103.5
3F1	5.72	6.21	5.72	6.21	0.00	131.4
4F1	6.24	5.77	6.24	5.77	0.00	155.8

5C1	4.77	6.67	4.77	6.67	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
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.	180.4C	-161.2	161.2	-180.4C	189.1	-152.5	169.9	-171.6
OPER	300.6C	-268.7	268.7	-300.6C	315.2	-254.1	283.2	-286.1

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	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28			
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71		
OPER	HS20	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28			
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71		
OPER	2F1	14.37 L	11.05	83.28	0.0	0.00	0.00	0.00	0.00		
		-36.57 R	-28.13	112.84	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.08 R	10.83	139.15	0.0	0.00	0.00	0.00	0.00		
		-52.47 R	-40.36	115.23	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.96 R	11.51	143.15	0.0	0.00	0.00	0.00	0.00		
		-56.46 R	-43.43	118.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.88 R	22.99	140.28	0.0	0.00	0.00	0.00	0.00		
		-46.17 R	-35.52	119.63	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	7.11	2.51	6.39	2.82	HS 50.12	90.2
HS20	11.85	4.18	10.65	4.70	HS 83.53	150.4
2F1	21.94	6.95	19.72	7.82	0.00	104.2
3F1	22.39	4.84	20.12	5.45	0.00	111.4
4F1	21.06	4.50	18.93	5.07	0.00	121.5
5C1	10.55	5.50	9.48	6.20	0.00	220.1

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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.9	73.7
OPER	151.3	-109.9	122.9

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	-32.74	3.30	-25.19	2.54	-26.16	3.54	-20.12	2.72
OPER	HS20	-32.74	3.30	-25.19	2.54	-26.16	3.54	-20.12	2.72
OPER	2F1	-19.28	2.22	-14.83	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	3.19	-20.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.42	3.43	-21.09	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-25.01	3.23	-19.24	2.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	20.85	HS 40.26	72.5
HS20	3.36	34.74	HS 67.11	120.8
2F1	5.70	55.27	0.00	85.5
3F1	4.13	38.53	0.00	95.0
4F1	4.01	35.81	0.00	108.2
5C1	4.39	37.99	0.00	175.7

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. 4.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.2

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. 158.9	161.8	-173.5	161.8	-173.5	176.4	-158.9	176.4	-
OPER 264.8	279.4	-279.4	279.4	-279.4	294.0	-264.8	294.0	-

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	18.17 L	13.98	65.28	0.0	26.60	93.28	
		-60.84 L	-46.80	86.45	0.0	-56.56	105.23	83.71
OPER	HS20	18.17 L	13.98	65.28	0.0	26.60	93.28	
		-60.84 L	-46.80	86.45	0.0	-56.56	105.23	83.71
OPER	2F1	14.37 L	11.05	83.28	0.0	0.00	0.00	
		-36.57 R	-28.13	112.84	0.0	0.00	0.00	0.00
OPER	3F1	14.08 R	10.83	139.15	0.0	0.00	0.00	
		-52.47 R	-40.36	115.23	0.0	0.00	0.00	0.00
OPER	4F1	14.96 R	11.51	143.15	0.0	0.00	0.00	
		-56.46 R	-43.43	118.45	0.0	0.00	0.00	0.00
OPER	5C1	29.88 R	22.99	140.28	0.0	0.00	0.00	
		-46.17 R	-35.52	119.63	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	6.63	2.61	6.63	2.61	HS 52.24	94.0
HS20	11.05	4.35	11.05	4.35	HS 87.06	156.7
2F1	20.46	7.24	20.46	7.24	0.00	108.6
3F1	20.89	5.05	20.89	5.05	0.00	116.1
4F1	19.65	4.69	19.65	4.69	0.00	126.6

5C1 9.84 5.74 9.84 5.74 0.00 229.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-2.9 -29.1

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	199.6	-142.0	180.4	-161.2
OPER	300.6C	-268.7	268.7	-300.6C	332.7	-236.6	300.7	-268.6

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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00			
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00			
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00			
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00			
		-66.52 R	-51.17	100.49	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	11.43	1.34	10.33	1.52	HS 26.86	48.4
HS20	19.05	2.24	17.22	2.54	HS 44.77	80.6
2F1	29.61	5.65	26.76	6.41	0.00	84.7
3F1	20.64	3.46	18.66	3.93	0.00	79.6
4F1	19.18	2.97	17.34	3.37	0.00	80.1
5C1	23.61	3.56	21.34	4.04	0.00	142.3

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.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.9	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.9	64.9
OPER	151.3	-108.2	108.2

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	-32.74	37.61	-25.19	28.93	-26.16	28.97	-20.12	22.28
OPER	HS20	-32.74	37.61	-25.19	28.93	-26.16	28.97	-20.12	22.28
OPER	2F1	-19.28	21.47	-14.83	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	30.18	-20.47	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.42	31.72	-21.09	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-25.01	28.46	-19.24	21.89	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.73	HS 34.54	62.2
HS20	2.88	2.88	HS 57.56	103.6
2F1	5.04	5.04	0.00	75.6
3F1	3.59	3.59	0.00	82.5
4F1	3.41	3.41	0.00	92.1
5C1	3.80	3.80	0.00	152.2

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. 5.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -29.1

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. 148.4	154.8	-180.5	154.8	-180.5	186.9	-148.4	186.9	-
OPER 247.4	279.4	-279.4	279.4	-279.4	311.4	-247.4	311.4	-

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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00	
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00	
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00	
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00	
		-66.52 R	-51.17	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.70	1.40	10.70	1.40	HS 28.08	50.6
HS20	17.83	2.34	17.83	2.34	HS 46.81	84.3
2F1	27.72	5.91	27.72	5.91	0.00	88.6
3F1	19.32	3.62	19.32	3.62	0.00	83.2
4F1	17.96	3.10	17.96	3.10	0.00	83.8

5C1	22.10	3.72	22.10	3.72	0.00	148.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-2.9 -29.1

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	199.6	-142.0	180.4	-161.2
OPER	300.6C	-268.7	268.7	-300.6C	332.7	-236.6	300.7	-268.6

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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00			
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00			
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00			
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00			
		-66.52 R	-51.17	100.49	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	11.43	1.34	10.33	1.52	HS 26.86	48.4
HS20	19.05	2.24	17.22	2.54	HS 44.77	80.6
2F1	29.61	5.65	26.76	6.41	0.00	84.7
3F1	20.64	3.46	18.66	3.93	0.00	79.6
4F1	19.18	2.97	17.34	3.37	0.00	80.1
5C1	23.61	3.56	21.34	4.04	0.00	142.3

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.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.4	7.4

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.9	64.9
OPER	151.3	-108.2	108.2

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	-37.61	37.61	-28.93	28.93	-28.97	28.97	-22.28	22.28
OPER	HS20	-37.61	37.61	-28.93	28.93	-28.97	28.97	-22.28	22.28
OPER	2F1	-21.47	21.47	-16.51	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.18	30.18	-23.21	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.72	31.72	-24.40	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-28.46	28.46	-21.89	21.89	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.73	HS 34.54	62.2
HS20	2.88	2.88	HS 57.56	103.6
2F1	5.04	5.04	0.00	75.6
3F1	3.59	3.59	0.00	82.5
4F1	3.41	3.41	0.00	92.1
5C1	3.80	3.80	0.00	152.2

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. 5.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.9 -29.1

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. 148.4	154.8	-180.5	154.8	-180.5	186.9	-148.4	186.9	-
OPER 247.4	279.4	-279.4	279.4	-279.4	311.4	-247.4	311.4	-

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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00	
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00	
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00	
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00	
		-66.52 R	-51.17	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.70	1.40	10.70	1.40	HS 28.08	50.6
HS20	17.83	2.34	17.83	2.34	HS 46.81	84.3
2F1	27.72	5.91	27.72	5.91	0.00	88.6
3F1	19.32	3.62	19.32	3.62	0.00	83.2
4F1	17.96	3.10	17.96	3.10	0.00	83.8

5C1	22.10	3.72	22.10	3.72	0.00	148.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-1.3	-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.	180.4C	-161.2	161.2	-180.4C	189.1	-152.5	169.9	-171.6
OPER	300.6C	-268.7	268.7	-300.6C	315.2	-254.1	283.2	-286.1

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	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06			
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10		107.63	
OPER	HS20	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06			
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10		107.63	
OPER	2F1	14.37 R	11.05	108.06	0.0	0.00	0.00	0.00			
		-36.58 L	-28.13	78.49	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	14.08 L	10.83	52.18	0.0	0.00	0.00	0.00			
		-52.47 L	-40.36	76.10	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	14.96 L	11.51	48.18	0.0	0.00	0.00	0.00			
		-56.46 L	-43.43	72.88	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	29.89 L	22.99	51.06	0.0	0.00	0.00	0.00			
		-46.17 L	-35.52	71.71	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	6.99	2.51	6.28	2.82	HS 50.12	90.2
HS20	11.66	4.18	10.48	4.70	HS 83.53	150.4
2F1	21.94	6.95	19.72	7.82	0.00	104.2
3F1	22.39	4.84	20.12	5.45	0.00	111.4
4F1	21.06	4.50	18.93	5.07	0.00	121.5
5C1	10.55	5.50	9.48	6.20	0.00	220.1

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	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	65.9
OPER	151.3	-122.9	109.9

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	-3.17	32.74	-2.44	25.19	-3.54	26.16	-2.72	20.12
OPER	HS20	-3.17	32.74	-2.44	25.19	-3.54	26.16	-2.72	20.12
OPER	2F1	-2.22	19.28	-1.71	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	26.61	-2.45	20.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	27.42	-2.62	21.09	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	25.01	-2.49	19.24	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.85	2.01	HS 40.26	72.5
HS20	34.75	3.36	HS 67.11	120.8
2F1	55.27	5.70	0.00	85.5
3F1	38.53	4.13	0.00	95.0
4F1	36.04	4.01	0.00	108.2
5C1	37.99	4.39	0.00	175.7

SERVICEABILITY 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 Moment -1.3
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. 158.9	161.8	-173.5	161.8	-173.5	176.4	-158.9	176.4	-
OPER 264.8	279.4	-279.4	279.4	-279.4	294.0	-264.8	294.0	-

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	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06	
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63
OPER	HS20	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06	
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63
OPER	2F1	14.37 R	11.05	108.06	0.0	0.00	0.00	0.00	
		-36.58 L	-28.13	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.08 L	10.83	52.18	0.0	0.00	0.00	0.00	
		-52.47 L	-40.36	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.96 L	11.51	48.18	0.0	0.00	0.00	0.00	
		-56.46 L	-43.43	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.89 L	22.99	51.06	0.0	0.00	0.00	0.00	
		-46.17 L	-35.52	71.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.52	2.61	6.52	2.61	HS 52.24	94.0
HS20	10.87	4.35	10.87	4.35	HS 87.06	156.7
2F1	20.46	7.24	20.46	7.24	0.00	108.6
3F1	20.89	5.05	20.89	5.05	0.00	116.1
4F1	19.64	4.69	19.64	4.69	0.00	126.6

5C1	9.84	5.74	9.84	5.74	0.00	229.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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	-0.8

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	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-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	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45			
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27		
OPER	HS20	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45			
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27		
OPER	2F1	40.64 R	31.26	110.45	0.0	0.00	0.00	0.00			
		-31.26 L	-24.05	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.06 R	37.74	114.45	0.0	0.00	0.00	0.00			
		-44.85 L	-34.50	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.93 R	34.56	118.45	0.0	0.00	0.00	0.00			
		-48.26 L	-37.13	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.75 L	45.19	53.45	0.0	0.00	0.00	0.00			
		-41.75 L	-32.11	74.10	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	2.88	3.45	2.58	3.87	HS 51.50	92.7
HS20	4.80	5.76	4.29	6.45	HS 85.83	154.5
2F1	7.42	8.56	6.64	9.59	0.00	99.5
3F1	6.15	5.97	5.50	6.68	0.00	126.4
4F1	6.71	5.55	6.00	6.21	0.00	149.8
5C1	5.13	6.41	4.59	7.18	0.00	183.5

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
0.4	0.0	4.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.9
OPER	151.3	-121.3	111.5

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	-3.17	27.57	-2.44	21.21	-4.91	23.09	-3.78	17.76
OPER	HS20	-3.17	27.57	-2.44	21.21	-4.91	23.09	-3.78	17.76
OPER	2F1	-2.22	16.80	-1.71	12.93	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	22.73	-2.45	17.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	23.45	-2.62	18.04	0.00	0.00	0.00	0.00
OPER	5C1	-4.89	21.39	-3.76	16.46	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.81	2.43	HS 48.52	87.3
HS20	24.69	4.04	HS 80.87	145.6
2F1	54.54	6.64	0.00	99.5
3F1	38.02	4.91	0.00	112.8
4F1	35.56	4.75	0.00	128.3
5C1	24.78	5.21	0.00	208.5

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. 5.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

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. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

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	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10 38.27
OPER	HS20	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10 38.27
OPER	2F1	40.64 R	31.26	110.45	0.0	0.00	0.00	0.00
		-31.26 L	-24.05	78.49	0.0	0.00	0.00	0.00 0.00
OPER	3F1	49.06 R	37.74	114.45	0.0	0.00	0.00	0.00
		-44.85 L	-34.50	76.10	0.0	0.00	0.00	0.00 0.00
OPER	4F1	44.93 R	34.56	118.45	0.0	0.00	0.00	0.00
		-48.26 L	-37.13	72.88	0.0	0.00	0.00	0.00 0.00
OPER	5C1	58.75 L	45.19	53.45	0.0	0.00	0.00	0.00
		-41.75 L	-32.11	74.10	0.0	0.00	0.00	0.00 0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.55	96.4
HS20	4.46	5.99	4.46	5.99	HS 89.25	160.6
2F1	6.90	8.91	6.90	8.91	0.00	103.5
3F1	5.72	6.21	5.72	6.21	0.00	131.4
4F1	6.24	5.77	6.24	5.77	0.00	155.8

5C1	4.77	6.67	4.77	6.67	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
0.8 8.0

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	175.1	-166.5	155.9	-185.7
OPER	300.6C	-268.7	268.7	-300.6C	291.8	-277.4	259.9	-309.4

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	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84			
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00		
OPER	HS20	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84			
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00		
OPER	2F1	59.67 R	45.90	112.84	0.0	0.00	0.00	0.00			
		-25.95 L	-19.96	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.13 R	57.80	116.84	0.0	0.00	0.00	0.00			
		-37.23 L	-28.64	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.42 R	58.78	116.84	0.0	0.00	0.00	0.00			
		-40.07 L	-30.82	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.59 L	60.46	55.84	0.0	0.00	0.00	0.00			
		-39.20 L	-30.15	74.88	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	1.93	4.31	1.72	4.81	HS 34.42	62.0
HS20	3.22	7.19	2.87	8.02	HS 57.37	103.3
2F1	4.89	10.69	4.36	11.92	0.00	65.3
3F1	3.88	7.45	3.46	8.31	0.00	79.5
4F1	3.82	6.93	3.40	7.72	0.00	91.8
5C1	3.71	7.08	3.31	7.89	0.00	132.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.300

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	67.9
OPER	151.3	-119.6	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	-5.50	22.59	-4.23	17.38	-7.43	19.85	-5.72	15.27
OPER	HS20	-5.50	22.59	-4.23	17.38	-7.43	19.85	-5.72	15.27
OPER	2F1	-3.96	14.15	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.70	-3.26	14.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	19.25	-2.62	14.81	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.80	-5.30	13.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.66	3.00	HS 60.08	108.1
HS20	16.10	5.01	HS 100.13	180.2
2F1	30.18	7.99	0.00	119.9
3F1	28.26	6.05	0.00	139.1
4F1	35.09	5.88	0.00	158.6
5C1	17.35	6.35	0.00	254.1

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. 5.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.0

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. 172.9	171.2	-164.1	171.2	-164.1	162.4	-172.9	162.4	-
OPER 288.2	279.4	-279.4	279.4	-279.4	270.6	-288.2	270.6	-

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	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84	
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00
OPER	HS20	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84	
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00
OPER	2F1	59.67 R	45.90	112.84	0.0	0.00	0.00	0.00	
		-25.95 L	-19.96	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.13 R	57.80	116.84	0.0	0.00	0.00	0.00	
		-37.23 L	-28.64	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.42 R	58.78	116.84	0.0	0.00	0.00	0.00	
		-40.07 L	-30.82	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.59 L	60.46	55.84	0.0	0.00	0.00	0.00	
		-39.20 L	-30.15	74.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.48	1.79	4.48	HS 35.85	64.5
HS20	2.99	7.47	2.99	7.47	HS 59.75	107.5
2F1	4.53	11.10	4.53	11.10	0.00	68.0
3F1	3.60	7.74	3.60	7.74	0.00	82.8
4F1	3.54	7.19	3.54	7.19	0.00	95.6

5C1	3.44	7.35	3.44	7.35	0.00	137.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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. 5.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

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	171.6	-170.0	152.4	-189.2
OPER	300.6C	-268.7	268.7	-300.6C	286.0	-283.3	254.0	-315.3

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	101.24	R	77.88	133.23	0.0	81.41	62.62	105.23		
		-30.70	L	-23.62	62.88	0.0	-27.53	-21.17	86.10	0.00	
OPER	HS20	101.24	R	77.88	133.23	0.0	81.41	62.62	105.23		
		-30.70	L	-23.62	62.88	0.0	-27.53	-21.17	86.10	0.00	
OPER	2F1	69.95	R	53.81	115.23	0.0	0.00	0.00	0.00		
		-20.64	L	-15.88	78.49	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	88.52	R	68.09	115.23	0.0	0.00	0.00	0.00		
		-29.62	L	-22.78	76.10	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.54	R	72.72	119.23	0.0	0.00	0.00	0.00		
		-31.87	L	-24.51	72.88	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	89.22	R	68.63	117.23	0.0	0.00	0.00	0.00		
		-37.28	L	-28.68	75.76	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	1.70	5.54	1.50	6.16	HS 30.10	54.2
HS20	2.83	9.23	2.51	10.27	HS 50.17	90.3
2F1	4.09	13.72	3.63	15.27	0.00	54.5
3F1	3.23	9.57	2.87	10.65	0.00	66.0
4F1	3.03	8.89	2.69	9.89	0.00	72.5
5C1	3.20	7.60	2.85	8.46	0.00	113.9

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.	5.400		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	-10.43	18.82	-8.02	14.48	-10.27	16.56	-7.90	12.74
OPER	HS20	-10.43	18.82	-8.02	14.48	-10.27	16.56	-7.90	12.74
OPER	2F1	-6.24	11.44	-4.80	8.80	0.00	0.00	0.00	0.00
OPER	3F1	-7.36	14.70	-5.66	11.31	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.82	-4.80	11.40	0.00	0.00	0.00	0.00
OPER	5C1	-9.20	14.80	-7.08	11.38	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.79	3.66	HS 73.14	131.7
HS20	11.32	6.09	HS 121.90	219.4
2F1	18.90	10.03	0.00	150.4
3F1	16.03	7.80	0.00	179.4
4F1	18.92	7.74	0.00	209.1
5C1	12.82	7.75	0.00	310.1

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. 5.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

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. 176.4	173.5	-161.8	173.5	-161.8	158.8	-176.4	158.8	-
OPER 294.1	279.4	-279.4	279.4	-279.4	264.7	-294.1	264.7	-

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	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10
OPER	HS20	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10
OPER	2F1	69.95 R	53.81	115.23	0.0	0.00	0.00	0.00
		-20.64 L	-15.88	78.49	0.0	0.00	0.00	0.00
OPER	3F1	88.52 R	68.09	115.23	0.0	0.00	0.00	0.00
		-29.62 L	-22.78	76.10	0.0	0.00	0.00	0.00
OPER	4F1	94.54 R	72.72	119.23	0.0	0.00	0.00	0.00
		-31.87 L	-24.51	72.88	0.0	0.00	0.00	0.00
OPER	5C1	89.22 R	68.63	117.23	0.0	0.00	0.00	0.00
		-37.28 L	-28.68	75.76	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	5.75	1.57	5.75	HS 31.38	56.5
HS20	2.62	9.58	2.62	9.58	HS 52.30	94.1
2F1	3.78	14.24	3.78	14.24	0.00	56.8
3F1	2.99	9.93	2.99	9.93	0.00	68.8
4F1	2.80	9.23	2.80	9.23	0.00	75.6

5C1	2.97	7.89	2.97	7.89	0.00	118.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	97.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		11.07		107.2

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	11.96	1.00	33000.	73.86	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. 5.500 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.5 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	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63			
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00		
OPER	HS20	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63			
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00		
OPER	2F1	71.01 R	54.63	117.63	0.0	0.00	0.00	0.00			
		-15.35 R	-11.81	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.09 L	72.37	97.63	0.0	0.00	0.00	0.00			
		-22.02 R	-16.94	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	97.73 L	75.17	93.63	0.0	0.00	0.00	0.00			
		-23.69 R	-18.23	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	92.36 R	71.05	158.63	0.0	0.00	0.00	0.00			
		-36.58 R	-28.14	137.88	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	7.21	1.55	8.02	HS 30.94	55.7
HS20	2.90	12.02	2.58	13.36	HS 51.56	92.8
2F1	4.00	18.59	3.55	20.67	0.00	53.2
3F1	3.02	12.96	2.68	14.41	0.00	61.6
4F1	2.91	12.04	2.58	13.39	0.00	69.6
5C1	3.08	7.80	2.73	8.68	0.00	109.1

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
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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	-69.8	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	-14.89	14.89	-11.46	11.46	-13.36	13.33	-10.28	10.25
OPER	HS20	-14.89	14.89	-11.46	11.46	-13.36	13.33	-10.28	10.25
OPER	2F1	-8.77	8.77	-6.74	6.74	0.00	0.00	0.00	0.00
OPER	3F1	-10.88	10.89	-8.37	8.37	0.00	0.00	0.00	0.00
OPER	4F1	-10.28	10.28	-7.91	7.91	0.00	0.00	0.00	0.00
OPER	5C1	-11.76	11.76	-9.05	9.05	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.69	HS 93.75	168.7
HS20	7.82	7.81	HS 156.25	281.2
2F1	13.28	13.27	0.00	199.1
3F1	10.69	10.69	0.00	245.8
4F1	11.32	11.32	0.00	305.6
5C1	9.90	9.89	0.00	395.6

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. 5.500 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
1.5 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	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63	
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00
OPER	HS20	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63	
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00
OPER	2F1	71.01 R	54.63	117.63	0.0	0.00	0.00	0.00	
		-15.35 R	-11.81	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.09 L	72.37	97.63	0.0	0.00	0.00	0.00	
		-22.02 R	-16.94	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.73 L	75.17	93.63	0.0	0.00	0.00	0.00	
		-23.69 R	-18.23	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	92.36 R	71.05	158.63	0.0	0.00	0.00	0.00	
		-36.58 R	-28.14	137.88	0.0	0.00	0.00	0.00	0.00

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	7.48	1.61	7.48	HS 32.26	58.1
HS20	2.69	12.47	2.69	12.47	HS 53.76	96.8
2F1	3.70	19.29	3.70	19.29	0.00	55.5
3F1	2.79	13.44	2.79	13.44	0.00	64.2
4F1	2.69	12.49	2.69	12.49	0.00	72.6

5C1	2.85	8.09	2.85	8.09	0.00	113.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.356

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 1.3
 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.	180.4C	-161.2	161.2	-180.4C	171.7	-169.9	152.5	-189.1
OPER	300.6C	-268.7	268.7	-300.6C	286.2	-283.1	254.2	-315.1

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	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02			
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00		
OPER	HS20	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02			
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00		
OPER	2F1	69.96 L	53.81	100.02	0.0	0.00	0.00	0.00			
		-20.67 R	-15.90	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 L	68.09	100.02	0.0	0.00	0.00	0.00			
		-29.65 R	-22.81	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.55 L	72.73	96.02	0.0	0.00	0.00	0.00			
		-31.90 R	-24.54	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.26 L	68.67	98.02	0.0	0.00	0.00	0.00			
		-37.17 R	-28.59	138.76	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	1.70	5.53	1.51	6.15	HS 30.13	54.2
HS20	2.83	9.22	2.51	10.26	HS 50.21	90.4
2F1	4.09	13.70	3.63	15.25	0.00	54.5
3F1	3.23	9.55	2.87	10.63	0.00	66.0
4F1	3.03	8.88	2.69	9.88	0.00	72.6
5C1	3.21	7.62	2.85	8.48	0.00	113.9

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.	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	-18.82	10.43	-14.48	8.02	-16.59	10.24	-12.76	7.88
OPER	HS20	-18.82	10.43	-14.48	8.02	-16.59	10.24	-12.76	7.88
OPER	2F1	-11.44	6.25	-8.80	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.70	7.36	-11.31	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.81	6.24	-11.40	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.20	-11.38	7.08	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.80	HS 73.09	131.6
HS20	6.09	11.32	HS 121.81	219.3
2F1	10.02	18.91	0.00	150.3
3F1	7.80	16.04	0.00	179.3
4F1	7.74	18.93	0.00	208.9
5C1	7.75	12.83	0.00	309.9

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. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.3
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. 176.3	173.4	-161.9	173.4	-161.9	159.0	-176.3	159.0	-
OPER 293.9	279.4	-279.4	279.4	-279.4	264.9	-293.9	264.9	-

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	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02	
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00
OPER	HS20	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02	
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00
OPER	2F1	69.96 L	53.81	100.02	0.0	0.00	0.00	0.00	
		-20.67 R	-15.90	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.52 L	68.09	100.02	0.0	0.00	0.00	0.00	
		-29.65 R	-22.81	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.55 L	72.73	96.02	0.0	0.00	0.00	0.00	
		-31.90 R	-24.54	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.26 L	68.67	98.02	0.0	0.00	0.00	0.00	
		-37.17 R	-28.59	138.76	0.0	0.00	0.00	0.00	0.00

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	5.74	1.57	5.74	HS 31.40	56.5
HS20	2.62	9.57	2.62	9.57	HS 52.33	94.2
2F1	3.79	14.22	3.79	14.22	0.00	56.8
3F1	2.99	9.91	2.99	9.91	0.00	68.8
4F1	2.80	9.21	2.80	9.21	0.00	75.7

5C1	2.97	7.91	2.97	7.91	0.00	118.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.356

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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. 5.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.7

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	175.3	-166.2	156.2	-185.4
OPER	300.6C	-268.7	268.7	-300.6C	292.2	-277.0	260.3	-309.0

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41		
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00	
OPER	HS20	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41		
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00	
OPER	2F1	59.68 L	45.91	102.41	0.0	0.00	0.00	0.00		
		-25.98 R	-19.99	136.76	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	75.15 L	57.80	98.41	0.0	0.00	0.00	0.00		
		-37.27 R	-28.67	139.15	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	76.43 L	58.79	98.41	0.0	0.00	0.00	0.00		
		-40.11 R	-30.85	142.37	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	78.69 R	60.53	159.41	0.0	0.00	0.00	0.00		
		-39.23 R	-30.18	140.37	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	1.93	4.30	1.72	4.80	HS 34.47	62.1
HS20	3.23	7.17	2.87	8.00	HS 57.45	103.4
2F1	4.90	10.66	4.36	11.89	0.00	65.4
3F1	3.89	7.43	3.46	8.29	0.00	79.7
4F1	3.82	6.91	3.40	7.70	0.00	91.9
5C1	3.71	7.06	3.31	7.88	0.00	132.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.3	-3.0	0.0
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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	-22.59	5.50	-17.38	4.23	-19.88	7.40	-15.29	5.69
OPER	HS20	-22.59	5.50	-17.38	4.23	-19.88	7.40	-15.29	5.69
OPER	2F1	-14.15	3.97	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.70	4.23	-14.39	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.25	3.41	-14.81	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-17.80	6.90	-13.69	5.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.00	9.71	HS 60.03	108.1
HS20	5.00	16.18	HS 100.06	180.1
2F1	7.99	30.19	0.00	119.8
3F1	6.04	28.28	0.00	139.0
4F1	5.87	35.15	0.00	158.5
5C1	6.35	17.36	0.00	253.9

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 0.7
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	-
INV. 172.7	171.0	-164.3	171.0	-164.3	162.6	-172.7	162.6	-
OPER 287.8	279.4	-279.4	279.4	-279.4	271.0	-287.8	271.0	-

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	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15
OPER	HS20	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15
OPER	2F1	59.68 L	45.91	102.41	0.0	0.00	0.00	0.00
		-25.98 R	-19.99	136.76	0.0	0.00	0.00	0.00
OPER	3F1	75.15 L	57.80	98.41	0.0	0.00	0.00	0.00
		-37.27 R	-28.67	139.15	0.0	0.00	0.00	0.00
OPER	4F1	76.43 L	58.79	98.41	0.0	0.00	0.00	0.00
		-40.11 R	-30.85	142.37	0.0	0.00	0.00	0.00
OPER	5C1	78.69 R	60.53	159.41	0.0	0.00	0.00	0.00
		-39.23 R	-30.18	140.37	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	1.79	4.47	1.79	4.47	HS 35.90	64.6
HS20	2.99	7.45	2.99	7.45	HS 59.83	107.7
2F1	4.54	11.08	4.54	11.08	0.00	68.1
3F1	3.61	7.72	3.61	7.72	0.00	82.9
4F1	3.55	7.18	3.55	7.18	0.00	95.7

5C1	3.44	7.34	3.44	7.34	0.00	137.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.356

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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
-0.2 -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.	180.4C	-161.2	161.2	-180.4C	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

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	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80			
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98		
OPER	HS20	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80			
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98		
OPER	2F1	40.65 L	31.27	104.80	0.0	0.00	0.00	0.00	0.00		
		-31.30 R	-24.08	136.76	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	49.07 L	37.75	100.80	0.0	0.00	0.00	0.00	0.00		
		-44.90 R	-34.54	139.15	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.94 L	34.57	96.80	0.0	0.00	0.00	0.00	0.00		
		-48.32 R	-37.17	142.37	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.90 R	45.31	161.80	0.0	0.00	0.00	0.00	0.00		
		-41.79 R	-32.15	141.15	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	2.88	3.44	2.58	3.86	HS 51.60	92.9
HS20	4.81	5.74	4.30	6.43	HS 86.00	154.8
2F1	7.43	8.53	6.65	9.56	0.00	99.7
3F1	6.16	5.95	5.51	6.66	0.00	126.6
4F1	6.72	5.53	6.01	6.19	0.00	149.3
5C1	5.13	6.39	4.59	7.16	0.00	183.5

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	-4.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.3

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	-27.57	3.17	-21.21	2.44	-23.12	4.88	-17.78	3.75
OPER	HS20	-27.57	3.17	-21.21	2.44	-23.12	4.88	-17.78	3.75
OPER	2F1	-16.80	2.22	-12.92	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.73	3.19	-17.48	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.45	3.41	-18.04	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.39	4.89	-16.45	3.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.42	14.92	HS 48.49	87.3
HS20	4.04	24.86	HS 80.82	145.5
2F1	6.63	54.65	0.00	99.5
3F1	4.90	38.09	0.00	112.7
4F1	4.75	35.63	0.00	128.3
5C1	5.21	24.81	0.00	208.4

SERVICEABILITY 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 Moment -0.2
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. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

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	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80	
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98
OPER	HS20	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80	
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98
OPER	2F1	40.65 L	31.27	104.80	0.0	0.00	0.00	0.00	
		-31.30 R	-24.08	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.07 L	37.75	100.80	0.0	0.00	0.00	0.00	
		-44.90 R	-34.54	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.94 L	34.57	96.80	0.0	0.00	0.00	0.00	
		-48.32 R	-37.17	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.90 R	45.31	161.80	0.0	0.00	0.00	0.00	
		-41.79 R	-32.15	141.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.58	2.68	3.58	HS 53.65	96.6
HS20	4.47	5.97	4.47	5.97	HS 89.42	161.0
2F1	6.91	8.88	6.91	8.88	0.00	103.7
3F1	5.72	6.19	5.72	6.19	0.00	131.7
4F1	6.25	5.75	6.25	5.75	0.00	155.3

5C1	4.77	6.65	4.77	6.65	0.00	190.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.356

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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
-1.4	-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	189.6	-152.0	170.4	-171.2
OPER	300.6C	-268.7	268.7	-300.6C	316.0	-253.3	284.0	-285.3

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	18.19	L	13.99	89.19	0.0	26.29	20.22	117.19		
		-60.91	L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63	
OPER	HS20	18.19	L	13.99	89.19	0.0	26.29	20.22	117.19		
		-60.91	L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63	
OPER	2F1	14.38	L	11.06	107.19	0.0	0.00	0.00	0.00		
		-36.62	R	-28.17	136.76	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	14.29	R	10.99	163.07	0.0	0.00	0.00	0.00		
		-52.53	R	-40.41	139.15	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	15.19	R	11.68	167.07	0.0	0.00	0.00	0.00		
		-56.52	R	-43.48	142.37	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	30.08	R	23.14	164.19	0.0	0.00	0.00	0.00		
		-46.23	R	-35.56	143.54	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	7.21	2.49	6.48	2.81	HS 49.90	89.8
HS20	12.02	4.16	10.81	4.68	HS 83.17	149.7
2F1	21.98	6.92	19.76	7.79	0.00	103.8
3F1	22.12	4.82	19.88	5.43	0.00	110.9
4F1	20.80	4.48	18.70	5.05	0.00	121.0
5C1	10.51	5.48	9.44	6.17	0.00	219.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.9	73.8
OPER	151.3	-109.8	123.0

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	-32.74	3.30	-25.19	2.54	-26.19	3.50	-20.15	2.69
OPER	HS20	-32.74	3.30	-25.19	2.54	-26.19	3.50	-20.15	2.69
OPER	2F1	-19.28	2.22	-14.83	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	3.19	-20.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.41	3.43	-21.09	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-25.00	3.23	-19.23	2.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	21.07	HS 40.24	72.4
HS20	3.35	35.12	HS 67.06	120.7
2F1	5.70	55.38	0.00	85.4
3F1	4.13	38.60	0.00	94.9
4F1	4.01	35.87	0.00	108.1
5C1	4.39	38.05	0.00	175.7

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. 5.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.4 -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	-
ber								
INV. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

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	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19	
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63
OPER	HS20	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19	
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63
OPER	2F1	14.38 L	11.06	107.19	0.0	0.00	0.00	0.00	
		-36.62 R	-28.17	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.29 R	10.99	163.07	0.0	0.00	0.00	0.00	
		-52.53 R	-40.41	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.19 R	11.68	167.07	0.0	0.00	0.00	0.00	
		-56.52 R	-43.48	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	30.08 R	23.14	164.19	0.0	0.00	0.00	0.00	
		-46.23 R	-35.56	143.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.73	2.60	6.73	2.60	HS 52.02	93.6
HS20	11.21	4.34	11.21	4.34	HS 86.70	156.1
2F1	20.50	7.21	20.50	7.21	0.00	108.2
3F1	20.63	5.03	20.63	5.03	0.00	115.6
4F1	19.41	4.67	19.41	4.67	0.00	126.1

5C1	9.80	5.71	9.80	5.71	0.00	228.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.356

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-3.0	-30.0

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	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15		110.02	
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15		110.02	
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00			
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00			0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00			
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00			0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00			
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00			0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00			
		-66.50 R	-51.15	124.37	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	11.65	1.34	10.54	1.52	HS 26.74	48.1
HS20	19.42	2.23	17.56	2.53	HS 44.57	80.2
2F1	29.25	5.62	26.45	6.38	0.00	84.3
3F1	20.39	3.45	18.44	3.91	0.00	79.3
4F1	18.96	2.95	17.14	3.35	0.00	79.7
5C1	24.80	3.54	22.42	4.02	0.00	141.7

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.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.0	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.9	64.8
OPER	151.3	-108.2	108.1

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	-32.74	37.62	-25.19	28.94	-26.19	29.03	-20.15	22.33
OPER	HS20	-32.74	37.62	-25.19	28.94	-26.19	29.03	-20.15	22.33
OPER	2F1	-19.28	21.47	-14.83	16.52	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	30.19	-20.47	23.22	0.00	0.00	0.00	0.00
OPER	4F1	-27.41	31.73	-21.09	24.41	0.00	0.00	0.00	0.00
OPER	5C1	-25.00	28.47	-19.23	21.90	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.72	HS 34.47	62.1
HS20	2.88	2.87	HS 57.45	103.4
2F1	5.04	5.03	0.00	75.5
3F1	3.58	3.58	0.00	82.3
4F1	3.41	3.41	0.00	92.0
5C1	3.80	3.80	0.00	151.9

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. 6.000 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-3.0 -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. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00	
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00	
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00	
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00	
		-66.50 R	-51.15	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.91	1.40	10.91	1.40	HS 27.96	50.3
HS20	18.19	2.33	18.19	2.33	HS 46.61	83.9
2F1	27.39	5.88	27.39	5.88	0.00	88.1
3F1	19.10	3.60	19.10	3.60	0.00	82.9
4F1	17.75	3.09	17.75	3.09	0.00	83.4

5C1	23.22	3.70	23.22	3.70	0.00	148.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-3.0	-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	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15		110.02	
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15		110.02	
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00		0.00	
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00		0.00	
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00		0.00	
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00		0.00	
		-66.50 R	-51.15	124.37	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	11.65	1.34	10.54	1.52	HS 26.74	48.1
HS20	19.42	2.23	17.56	2.53	HS 44.57	80.2
2F1	29.25	5.62	26.45	6.38	0.00	84.3
3F1	20.39	3.45	18.44	3.91	0.00	79.3
4F1	18.96	2.95	17.14	3.35	0.00	79.7
5C1	24.80	3.54	22.42	4.02	0.00	141.7

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.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.5	7.5

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.9	64.8
OPER	151.3	-108.2	108.1

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	-37.61	37.62	-28.93	28.94	-29.00	29.03	-22.31	22.33
OPER	HS20	-37.61	37.62	-28.93	28.94	-29.00	29.03	-22.31	22.33
OPER	2F1	-21.47	21.47	-16.51	16.52	0.00	0.00	0.00	0.00
OPER	3F1	-30.18	30.19	-23.21	23.22	0.00	0.00	0.00	0.00
OPER	4F1	-31.72	31.73	-24.40	24.41	0.00	0.00	0.00	0.00
OPER	5C1	-28.44	28.47	-21.88	21.90	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.73	1.72	HS 34.47	62.1
HS20	2.88	2.87	HS 57.45	103.4
2F1	5.04	5.03	0.00	75.5
3F1	3.58	3.58	0.00	82.3
4F1	3.41	3.41	0.00	92.0
5C1	3.80	3.80	0.00	151.9

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.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.0	-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. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00	
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00	
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00	
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00	
		-66.50 R	-51.15	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.91	1.40	10.91	1.40	HS 27.96	50.3
HS20	18.19	2.33	18.19	2.33	HS 46.61	83.9
2F1	27.39	5.88	27.39	5.88	0.00	88.1
3F1	19.10	3.60	19.10	3.60	0.00	82.9
4F1	17.75	3.09	17.75	3.09	0.00	83.4

5C1	23.22	3.70	23.22	3.70	0.00	148.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-1.4	-13.8

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	189.5	-152.1	170.3	-171.3
OPER	300.6C	-268.7	268.7	-300.6C	315.8	-253.5	283.8	-285.5

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	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98			
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54		
OPER	HS20	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98			
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54		
OPER	2F1	14.35 R	11.04	131.98	0.0	0.00	0.00	0.00			
		-36.56 L	-28.13	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.06 L	10.81	76.10	0.0	0.00	0.00	0.00			
		-52.46 L	-40.35	100.02	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.94 L	11.50	72.10	0.0	0.00	0.00	0.00			
		-56.45 L	-43.42	96.80	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	29.85 L	22.97	74.98	0.0	0.00	0.00	0.00			
		-46.15 L	-35.50	95.63	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	7.07	2.50	6.36	2.82	HS 50.01	90.0
HS20	11.79	4.17	10.59	4.69	HS 83.35	150.0
2F1	22.01	6.93	19.78	7.81	0.00	104.0
3F1	22.47	4.83	20.19	5.44	0.00	111.1
4F1	21.13	4.49	18.99	5.06	0.00	121.3
5C1	10.58	5.49	9.51	6.19	0.00	219.7

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	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.8	65.8
OPER	151.3	-123.0	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	-3.19	32.76	-2.45	25.20	-3.50	26.23	-2.69	20.17
OPER	HS20	-3.19	32.76	-2.45	25.20	-3.50	26.23	-2.69	20.17
OPER	2F1	-2.26	19.28	-1.74	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	26.62	-2.49	20.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	27.43	-2.66	21.10	0.00	0.00	0.00	0.00
OPER	5C1	-3.27	25.02	-2.52	19.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.08	2.01	HS 40.19	72.3
HS20	35.13	3.35	HS 66.98	120.6
2F1	54.51	5.69	0.00	85.3
3F1	38.01	4.12	0.00	94.8
4F1	35.56	4.00	0.00	108.0
5C1	37.60	4.39	0.00	175.4

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. 6.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.4 -13.8

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. 158.5	161.6	-173.7	161.6	-173.7	176.7	-158.5	176.7	-
OPER 264.2	279.4	-279.4	279.4	-279.4	294.6	-264.2	294.6	-

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	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98	
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54
OPER	HS20	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98	
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54
OPER	2F1	14.35 R	11.04	131.98	0.0	0.00	0.00	0.00	
		-36.56 L	-28.13	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.06 L	10.81	76.10	0.0	0.00	0.00	0.00	
		-52.46 L	-40.35	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.94 L	11.50	72.10	0.0	0.00	0.00	0.00	
		-56.45 L	-43.42	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.85 L	22.97	74.98	0.0	0.00	0.00	0.00	
		-46.15 L	-35.50	95.63	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.60	2.61	6.60	2.61	HS 52.13	93.8
HS20	10.99	4.34	10.99	4.34	HS 86.88	156.4
2F1	20.53	7.23	20.53	7.23	0.00	108.4
3F1	20.95	5.04	20.95	5.04	0.00	115.9
4F1	19.71	4.68	19.71	4.68	0.00	126.4

5C1	9.87	5.73	9.87	5.73	0.00	229.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 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	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37			
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18		
OPER	HS20	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37			
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18		
OPER	2F1	40.63 R	31.26	134.37	0.0	0.00	0.00	0.00			
		-31.26 L	-24.05	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.05 R	37.73	138.37	0.0	0.00	0.00	0.00			
		-44.85 L	-34.50	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.92 R	34.55	142.37	0.0	0.00	0.00	0.00			
		-48.26 L	-37.12	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.74 L	45.18	77.37	0.0	0.00	0.00	0.00			
		-41.74 L	-32.11	98.02	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	2.88	3.45	2.58	3.87	HS 51.54	92.8
HS20	4.80	5.75	4.30	6.44	HS 85.90	154.6
2F1	7.43	8.56	6.64	9.58	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.5
4F1	6.72	5.54	6.01	6.21	0.00	149.7
5C1	5.14	6.41	4.59	7.18	0.00	183.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

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

4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.4	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	-3.19	27.59	-2.45	21.22	-4.84	23.15	-3.72	17.81
OPER	HS20	-3.19	27.59	-2.45	21.22	-4.84	23.15	-3.72	17.81
OPER	2F1	-2.26	16.81	-1.74	12.93	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	22.74	-2.49	17.49	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	23.46	-2.66	18.05	0.00	0.00	0.00	0.00
OPER	5C1	-4.92	21.40	-3.78	16.47	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.05	2.42	HS 48.42	87.2
HS20	25.08	4.03	HS 80.71	145.3
2F1	53.79	6.62	0.00	99.3
3F1	37.51	4.89	0.00	112.6
4F1	35.10	4.74	0.00	128.1
5C1	24.69	5.20	0.00	208.0

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. 6.200 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.1 -1.0

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. 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	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37	
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18
OPER	HS20	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37	
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18
OPER	2F1	40.63 R	31.26	134.37	0.0	0.00	0.00	0.00	
		-31.26 L	-24.05	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.05 R	37.73	138.37	0.0	0.00	0.00	0.00	
		-44.85 L	-34.50	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.92 R	34.55	142.37	0.0	0.00	0.00	0.00	
		-48.26 L	-37.12	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.74 L	45.18	77.37	0.0	0.00	0.00	0.00	
		-41.74 L	-32.11	98.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.59	96.5
HS20	4.47	5.98	4.47	5.98	HS 89.32	160.8
2F1	6.91	8.90	6.91	8.90	0.00	103.6
3F1	5.72	6.20	5.72	6.20	0.00	131.5
4F1	6.24	5.77	6.24	5.77	0.00	155.7

5C1	4.78	6.67	4.78	6.67	0.00	191.0
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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.	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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
0.8 8.2

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	175.0	-166.6	155.8	-185.8
OPER	300.6C	-268.7	268.7	-300.6C	291.6	-277.6	259.7	-309.6

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	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76			
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00		
OPER	HS20	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76			
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00		
OPER	2F1	59.69 R	45.91	136.76	0.0	0.00	0.00	0.00			
		-25.96 L	-19.97	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.16 R	57.82	140.76	0.0	0.00	0.00	0.00			
		-37.24 L	-28.65	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.44 R	58.80	140.76	0.0	0.00	0.00	0.00			
		-40.07 L	-30.82	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.61 L	60.47	79.76	0.0	0.00	0.00	0.00			
		-39.25 L	-30.19	98.80	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	1.93	4.32	1.72	4.81	HS 34.39	61.9
HS20	3.22	7.19	2.87	8.02	HS 57.32	103.2
2F1	4.89	10.70	4.35	11.93	0.00	65.3
3F1	3.88	7.46	3.45	8.31	0.00	79.5
4F1	3.82	6.93	3.40	7.73	0.00	91.7
5C1	3.71	7.07	3.30	7.89	0.00	132.1

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.	6.300		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	-5.50	22.60	-4.23	17.38	-7.36	19.92	-5.66	15.32
OPER	HS20	-5.50	22.60	-4.23	17.38	-7.36	19.92	-5.66	15.32
OPER	2F1	-3.96	14.16	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.72	-3.25	14.40	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	19.27	-2.66	14.82	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.81	-5.31	13.70	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.77	3.00	HS 59.97	108.0
HS20	16.28	5.00	HS 99.96	179.9
2F1	30.25	7.97	0.00	119.6
3F1	28.33	6.03	0.00	138.8
4F1	34.63	5.86	0.00	158.3
5C1	17.36	6.34	0.00	253.7

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. 6.300 2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.2

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. 173.0	171.2	-164.0	171.2	-164.0	162.2	-173.0	162.2	-
OPER 288.4	279.4	-279.4	279.4	-279.4	270.4	-288.4	270.4	-

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	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76	
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00
OPER	HS20	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76	
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00
OPER	2F1	59.69 R	45.91	136.76	0.0	0.00	0.00	0.00	
		-25.96 L	-19.97	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.16 R	57.82	140.76	0.0	0.00	0.00	0.00	
		-37.24 L	-28.65	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.44 R	58.80	140.76	0.0	0.00	0.00	0.00	
		-40.07 L	-30.82	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.61 L	60.47	79.76	0.0	0.00	0.00	0.00	
		-39.25 L	-30.19	98.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.48	1.79	4.48	HS 35.82	64.5
HS20	2.98	7.47	2.98	7.47	HS 59.70	107.5
2F1	4.53	11.11	4.53	11.11	0.00	68.0
3F1	3.60	7.74	3.60	7.74	0.00	82.7
4F1	3.54	7.20	3.54	7.20	0.00	95.5

5C1	3.44	7.35	3.44	7.35	0.00	137.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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 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	171.2	-170.3	152.0	-189.5
OPER	300.6C	-268.7	268.7	-300.6C	285.4	-283.9	253.4	-315.9

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	101.24	R	77.88	157.15	0.0	81.67	62.82	129.15		
		-30.72	L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00	
OPER	HS20	101.24	R	77.88	157.15	0.0	81.67	62.82	129.15		
		-30.72	L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00	
OPER	2F1	70.00	R	53.85	139.15	0.0	0.00	0.00	0.00		
		-20.65	L	-15.89	102.41	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	88.57	R	68.13	139.15	0.0	0.00	0.00	0.00		
		-29.63	L	-22.79	100.02	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.60	R	72.77	143.15	0.0	0.00	0.00	0.00		
		-31.89	L	-24.53	96.80	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	89.27	R	68.67	141.15	0.0	0.00	0.00	0.00		
		-37.28	L	-28.68	100.41	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	1.69	5.55	1.50	6.17	HS 30.03	54.1
HS20	2.82	9.24	2.50	10.28	HS 50.06	90.1
2F1	4.08	13.75	3.62	15.29	0.00	54.3
3F1	3.22	9.58	2.86	10.66	0.00	65.8
4F1	3.02	8.90	2.68	9.91	0.00	72.3
5C1	3.20	7.61	2.84	8.47	0.00	113.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

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	1.6
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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	-10.43	18.83	-8.02	14.48	-10.20	16.63	-7.84	12.80
OPER	HS20	-10.43	18.83	-8.02	14.48	-10.20	16.63	-7.84	12.80
OPER	2F1	-6.24	11.45	-4.80	8.81	0.00	0.00	0.00	0.00
OPER	3F1	-7.35	14.72	-5.66	11.32	0.00	0.00	0.00	0.00
OPER	4F1	-6.23	14.83	-4.79	11.41	0.00	0.00	0.00	0.00
OPER	5C1	-9.18	14.80	-7.06	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.80	3.65	HS 73.01	131.4
HS20	11.33	6.08	HS 121.68	219.0
2F1	18.95	10.01	0.00	150.1
3F1	16.07	7.78	0.00	179.0
4F1	18.97	7.72	0.00	208.5
5C1	12.87	7.74	0.00	309.6

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. 6.400 2F1
3F1
4F1
5C1

Dead Load Moment 1.4
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. 176.8	173.7	-161.5	173.7	-161.5	158.5	-176.8	158.5	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

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	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15	
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00
OPER	HS20	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15	
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00
OPER	2F1	70.00 R	53.85	139.15	0.0	0.00	0.00	0.00	
		-20.65 L	-15.89	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.57 R	68.13	139.15	0.0	0.00	0.00	0.00	
		-29.63 L	-22.79	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.60 R	72.77	143.15	0.0	0.00	0.00	0.00	
		-31.89 L	-24.53	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.27 R	68.67	141.15	0.0	0.00	0.00	0.00	
		-37.28 L	-28.68	100.41	0.0	0.00	0.00	0.00	0.00

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	5.76	1.57	5.76	HS 31.31	56.4
HS20	2.61	9.59	2.61	9.59	HS 52.18	93.9
2F1	3.77	14.27	3.77	14.27	0.00	56.6
3F1	2.98	9.94	2.98	9.94	0.00	68.6
4F1	2.79	9.24	2.79	9.24	0.00	75.4

5C1	2.96	7.90	2.96	7.90	0.00	118.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.310

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.75		106.7

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	11.96	1.00	33000.	73.86	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	Superimposed Dead Load Moment
1.6	16.1

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	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	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54			
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07		0.00	
OPER	HS20	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54			
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07		0.00	
OPER	2F1	71.08 R	54.68	141.54	0.0	0.00	0.00	0.00			
		-15.58 R	-11.99	160.68	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.19 L	72.45	121.54	0.0	0.00	0.00	0.00			
		-22.35 R	-17.19	163.07	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	97.83 L	75.25	117.54	0.0	0.00	0.00	0.00			
		-24.04 R	-18.49	166.28	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	93.08 R	71.60	182.54	0.0	0.00	0.00	0.00			
		-36.84 R	-28.34	162.68	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	1.74	7.31	1.54	8.12	HS 30.79	55.4
HS20	2.89	12.18	2.57	13.54	HS 51.32	92.4
2F1	3.98	18.37	3.53	20.42	0.00	53.0
3F1	3.01	12.81	2.66	14.24	0.00	61.3
4F1	2.89	11.91	2.57	13.24	0.00	69.3
5C1	3.04	7.77	2.70	8.64	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.	6.500		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 (-)	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	-14.90	14.90	-11.46	11.46	-13.28	13.40	-10.22	10.31
OPER	HS20	-14.90	14.90	-11.46	11.46	-13.28	13.40	-10.22	10.31
OPER	2F1	-8.76	8.78	-6.74	6.75	0.00	0.00	0.00	0.00
OPER	3F1	-10.87	10.90	-8.36	8.38	0.00	0.00	0.00	0.00
OPER	4F1	-10.26	10.30	-7.90	7.92	0.00	0.00	0.00	0.00
OPER	5C1	-11.71	11.79	-9.01	9.07	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.68	HS 93.55	168.4
HS20	7.82	7.80	HS 155.91	280.6
2F1	13.31	13.24	0.00	198.6
3F1	10.72	10.66	0.00	245.2
4F1	11.36	11.28	0.00	304.6
5C1	9.95	9.85	0.00	394.1

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. 6.500 2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.1

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. 178.2	174.7	-160.6	174.7	-160.6	157.0	-178.2	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

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	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54	
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07	0.00
OPER	HS20	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54	
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07	0.00
OPER	2F1	71.08 R	54.68	141.54	0.0	0.00	0.00	0.00	
		-15.58 R	-11.99	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.19 L	72.45	121.54	0.0	0.00	0.00	0.00	
		-22.35 R	-17.19	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.83 L	75.25	117.54	0.0	0.00	0.00	0.00	
		-24.04 R	-18.49	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.08 R	71.60	182.54	0.0	0.00	0.00	0.00	
		-36.84 R	-28.34	162.68	0.0	0.00	0.00	0.00	0.00

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	7.58	1.61	7.58	HS 32.11	57.8
HS20	2.68	12.64	2.68	12.64	HS 53.52	96.3
2F1	3.68	19.06	3.68	19.06	0.00	55.2
3F1	2.78	13.29	2.78	13.29	0.00	63.9
4F1	2.68	12.35	2.68	12.35	0.00	72.2

5C1	2.81	8.06	2.81	8.06	0.00	112.5
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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 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. 6.600

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 14.5

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	170.9	-170.7	151.7	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.8	-284.5	252.8	-316.5

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	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93			
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00		
OPER	HS20	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93			
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00		
OPER	2F1	70.05 L	53.88	123.93	0.0	0.00	0.00	0.00			
		-20.98 R	-16.14	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.66 L	68.20	123.93	0.0	0.00	0.00	0.00			
		-30.09 R	-23.15	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.70 L	72.84	119.93	0.0	0.00	0.00	0.00			
		-32.37 R	-24.90	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.93 L	69.18	121.93	0.0	0.00	0.00	0.00			
		-37.55 R	-28.89	162.68	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	1.68	5.51	1.50	6.13	HS 29.92	53.9
HS20	2.81	9.19	2.49	10.22	HS 49.87	89.8
2F1	4.07	13.56	3.61	15.09	0.00	54.1
3F1	3.21	9.45	2.85	10.52	0.00	65.6
4F1	3.01	8.79	2.67	9.78	0.00	72.1
5C1	3.17	7.58	2.81	8.43	0.00	112.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

6.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.1	-1.4	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-68.9	70.8
OPER	151.3	-114.8	117.9

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	-18.84	10.44	-14.49	8.03	-16.51	10.31	-12.70	7.93
OPER	HS20	-18.84	10.44	-14.49	8.03	-16.51	10.31	-12.70	7.93
OPER	2F1	-11.43	6.25	-8.79	4.81	0.00	0.00	0.00	0.00
OPER	3F1	-14.69	7.37	-11.30	5.67	0.00	0.00	0.00	0.00
OPER	4F1	-14.80	6.24	-11.39	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.79	9.22	-11.38	7.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.66	6.78	HS 73.13	131.6
HS20	6.09	11.30	HS 121.89	219.4
2F1	10.05	18.86	0.00	150.7
3F1	7.82	16.00	0.00	179.8
4F1	7.76	18.90	0.00	209.4
5C1	7.76	12.80	0.00	310.5

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. 6.600 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		bottom fiber		top fiber		bottom fi	
ber	+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 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	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93	
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00
OPER	HS20	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93	
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00
OPER	2F1	70.05 L	53.88	123.93	0.0	0.00	0.00	0.00	
		-20.98 R	-16.14	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.66 L	68.20	123.93	0.0	0.00	0.00	0.00	
		-30.09 R	-23.15	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.70 L	72.84	119.93	0.0	0.00	0.00	0.00	
		-32.37 R	-24.90	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.93 L	69.18	121.93	0.0	0.00	0.00	0.00	
		-37.55 R	-28.89	162.68	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.72	1.56	5.72	HS 31.20	56.2
HS20	2.60	9.53	2.60	9.53	HS 51.99	93.6
2F1	3.76	14.07	3.76	14.07	0.00	56.4
3F1	2.97	9.81	2.97	9.81	0.00	68.4
4F1	2.78	9.12	2.78	9.12	0.00	75.1

5C1	2.93	7.86	2.93	7.86	0.00	117.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 9.3

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33		
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00	
OPER	HS20	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33		
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00	
OPER	2F1	59.80 L	46.00	126.33	0.0	0.00	0.00	0.00		
		-26.38 R	-20.29	160.68	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	75.32 L	57.94	122.33	0.0	0.00	0.00	0.00		
		-37.84 R	-29.10	163.07	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	76.61 L	58.93	122.33	0.0	0.00	0.00	0.00		
		-40.70 R	-31.31	166.28	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	80.03 R	61.56	183.33	0.0	0.00	0.00	0.00		
		-39.75 R	-30.58	164.28	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	1.92	4.30	1.71	4.79	HS 34.17	61.5
HS20	3.20	7.16	2.85	7.98	HS 56.94	102.5
2F1	4.86	10.57	4.32	11.78	0.00	64.8
3F1	3.86	7.37	3.43	8.22	0.00	78.9
4F1	3.79	6.85	3.37	7.64	0.00	91.1
5C1	3.63	7.01	3.23	7.82	0.00	129.2

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.	6.700		2F1
			3F1
			4F1
			5C1

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

-0.3	-2.9	0.0
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Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-67.9 71.7
OPER	151.3	-113.2 119.6

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	-22.61 5.52	-17.39 4.24	-19.80 7.47	-15.23 5.75				
OPER	HS20	-22.61 5.52	-17.39 4.24	-19.80 7.47	-15.23 5.75				
OPER	2F1	-14.14 3.97	-10.88 3.05	0.00 0.00	0.00 0.00				
OPER	3F1	-18.69 4.23	-14.37 3.26	0.00 0.00	0.00 0.00				
OPER	4F1	-19.24 3.40	-14.80 2.62	0.00 0.00	0.00 0.00				
OPER	5C1	-17.80 6.91	-13.69 5.31	0.00 0.00	0.00 0.00				

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	3.00	9.60	HS 60.08	108.1
HS20	5.01	16.00	HS 100.14	180.2
2F1	8.00	30.11	0.00	120.1
3F1	6.06	28.23	0.00	139.3
4F1	5.88	35.15	0.00	158.9
5C1	6.36	17.31	0.00	254.4

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. 6.700 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

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. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	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 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	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33	
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00
OPER	HS20	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33	
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00
OPER	2F1	59.80 L	46.00	126.33	0.0	0.00	0.00	0.00	
		-26.38 R	-20.29	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.32 L	57.94	122.33	0.0	0.00	0.00	0.00	
		-37.84 R	-29.10	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.61 L	58.93	122.33	0.0	0.00	0.00	0.00	
		-40.70 R	-31.31	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.03 R	61.56	183.33	0.0	0.00	0.00	0.00	
		-39.75 R	-30.58	164.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.46	1.78	4.46	HS 35.59	64.1
HS20	2.97	7.44	2.97	7.44	HS 59.31	106.8
2F1	4.50	10.98	4.50	10.98	0.00	67.5
3F1	3.57	7.65	3.57	7.65	0.00	82.2
4F1	3.51	7.11	3.51	7.11	0.00	94.9

5C1	3.36	7.29	3.36	7.29	0.00	134.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
0.0 0.6

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.	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	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72			
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98		
OPER	HS20	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72			
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98		
OPER	2F1	40.79 L	31.37	128.72	0.0	0.00	0.00	0.00			
		-31.78 R	-24.44	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.29 L	37.91	124.72	0.0	0.00	0.00	0.00			
		-45.58 R	-35.06	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	45.17 L	34.75	120.72	0.0	0.00	0.00	0.00			
		-49.03 R	-37.71	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.94 R	46.87	185.72	0.0	0.00	0.00	0.00			
		-42.43 R	-32.64	165.07	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	2.85	3.44	2.55	3.85	HS 51.00	91.8
HS20	4.76	5.74	4.25	6.42	HS 84.99	153.0
2F1	7.36	8.48	6.57	9.48	0.00	98.6
3F1	6.09	5.91	5.44	6.61	0.00	125.1
4F1	6.64	5.49	5.93	6.14	0.00	148.3
5C1	4.92	6.35	4.40	7.10	0.00	175.9

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
-0.4	-4.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.7
OPER	151.3	-111.6	121.2

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	-27.56	3.17	-21.20	2.43	-23.04	4.95	-17.72	3.81
OPER	HS20	-27.56	3.17	-21.20	2.43	-23.04	4.95	-17.72	3.81
OPER	2F1	-16.79	2.22	-12.92	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.71	3.18	-17.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.44	3.40	-18.03	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.30	4.90	-16.39	3.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.43	14.69	HS 48.58	87.4
HS20	4.05	24.48	HS 80.96	145.7
2F1	6.64	54.65	0.00	99.7
3F1	4.91	38.09	0.00	113.0
4F1	4.76	35.63	0.00	128.5
5C1	5.24	24.75	0.00	209.5

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. 6.800 2F1
3F1
4F1
5C1

Dead Load Moment 0.0
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. 168.0	167.9	-167.4	167.9	-167.4	167.2	-168.0	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	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72	
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98
OPER	HS20	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72	
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98
OPER	2F1	40.79 L	31.37	128.72	0.0	0.00	0.00	0.00	
		-31.78 R	-24.44	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.29 L	37.91	124.72	0.0	0.00	0.00	0.00	
		-45.58 R	-35.06	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	45.17 L	34.75	120.72	0.0	0.00	0.00	0.00	
		-49.03 R	-37.71	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.94 R	46.87	185.72	0.0	0.00	0.00	0.00	
		-42.43 R	-32.64	165.07	0.0	0.00	0.00	0.00	0.00

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	3.58	2.65	3.58	HS 53.04	95.5
HS20	4.42	5.97	4.42	5.97	HS 88.40	159.1
2F1	6.83	8.81	6.83	8.81	0.00	102.5
3F1	5.66	6.14	5.66	6.14	0.00	130.1
4F1	6.17	5.71	6.17	5.71	0.00	154.2

5C1	4.57	6.60	4.57	6.60	0.00	183.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 Moment	Superimposed Dead Load Moment
-1.2	-11.6

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	188.0	-153.5	168.8	-172.7
OPER	300.6C	-268.7	268.7	-300.6C	313.4	-255.9	281.4	-287.9

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	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11			
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07		131.54	
OPER	HS20	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11			
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07		131.54	
OPER	2F1	14.51 L	11.16	131.11	0.0	0.00	0.00	0.00		0.00	
		-37.18 R	-28.60	160.68	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	17.24 R	13.26	186.98	0.0	0.00	0.00	0.00		0.00	
		-53.32 R	-41.02	163.07	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	18.32 R	14.10	190.98	0.0	0.00	0.00	0.00		0.00	
		-57.36 R	-44.12	166.28	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	32.79 R	25.22	188.11	0.0	0.00	0.00	0.00		0.00	
		-46.95 R	-36.12	166.68	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	6.89	2.48	6.19	2.79	HS 49.63	89.3
HS20	11.49	4.14	10.31	4.65	HS 82.72	148.9
2F1	21.60	6.88	19.40	7.74	0.00	103.2
3F1	18.17	4.80	16.32	5.40	0.00	110.4
4F1	17.10	4.46	15.36	5.02	0.00	120.5
5C1	9.56	5.45	8.58	6.13	0.00	218.0

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.	6.900		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	73.7
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	-32.74	3.30	-25.18	2.54	-26.12	3.56	-20.09	2.74
OPER	HS20	-32.74	3.30	-25.18	2.54	-26.12	3.56	-20.09	2.74
OPER	2F1	-19.27	2.22	-14.82	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.59	3.18	-20.46	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.40	3.42	-21.08	2.63	0.00	0.00	0.00	0.00
OPER	5C1	-24.87	3.23	-19.13	2.48	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.02	20.71	HS 40.30	72.5
HS20	3.36	34.51	HS 67.17	120.9
2F1	5.71	55.38	0.00	85.6
3F1	4.14	38.60	0.00	95.1
4F1	4.01	35.87	0.00	108.4
5C1	4.42	38.04	0.00	176.8

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. 6.900 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -11.6

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. 160.0	162.5	-172.7	162.5	-172.7	175.3	-160.0	175.3	-
OPER 266.6	279.4	-279.4	279.4	-279.4	292.2	-266.6	292.2	-

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	18.42 L	14.17	113.11	0.0	27.29	141.11	
		-61.87 L	-47.59	134.28	0.0	-56.05	153.07	131.54
OPER	HS20	18.42 L	14.17	113.11	0.0	27.29	141.11	
		-61.87 L	-47.59	134.28	0.0	-56.05	153.07	131.54
OPER	2F1	14.51 L	11.16	131.11	0.0	0.00	0.00	
		-37.18 R	-28.60	160.68	0.0	0.00	0.00	0.00
OPER	3F1	17.24 R	13.26	186.98	0.0	0.00	0.00	
		-53.32 R	-41.02	163.07	0.0	0.00	0.00	0.00
OPER	4F1	18.32 R	14.10	190.98	0.0	0.00	0.00	
		-57.36 R	-44.12	166.28	0.0	0.00	0.00	0.00
OPER	5C1	32.79 R	25.22	188.11	0.0	0.00	0.00	
		-46.95 R	-36.12	166.68	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	6.42	2.59	6.42	2.59	HS 51.72	93.1
HS20	10.71	4.31	10.71	4.31	HS 86.19	155.1
2F1	20.14	7.17	20.14	7.17	0.00	107.6
3F1	16.94	5.00	16.94	5.00	0.00	115.0
4F1	15.94	4.65	15.94	4.65	0.00	125.5

5C1	8.91	5.68	8.91	5.68	0.00	227.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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
-2.8 -27.3

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	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00			
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00			
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00			
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00			
		-66.40 R	-51.07	148.28	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	8.88	1.35	8.02	1.53	HS 27.00	48.6
HS20	14.80	2.25	13.37	2.55	HS 45.01	81.0
2F1	23.95	5.60	21.64	6.36	0.00	84.1
3F1	16.75	3.46	15.12	3.93	0.00	79.7
4F1	15.62	2.96	14.11	3.36	0.00	80.0
5C1	18.49	3.59	16.70	4.07	0.00	143.7

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.	7.000		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	65.2
OPER	151.3	-108.3	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	-32.74	37.80	-25.18	29.08	-26.12	28.78	-20.09	22.14
OPER	HS20	-32.74	37.80	-25.18	29.08	-26.12	28.78	-20.09	22.14
OPER	2F1	-19.27	21.52	-14.82	16.55	0.00	0.00	0.00	0.00
OPER	3F1	-26.59	30.29	-20.46	23.30	0.00	0.00	0.00	0.00
OPER	4F1	-27.40	31.88	-21.08	24.52	0.00	0.00	0.00	0.00
OPER	5C1	-24.87	28.58	-19.13	21.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.73	1.73	HS 34.50	62.1
HS20	2.88	2.88	HS 57.49	103.5
2F1	5.05	5.05	0.00	75.7
3F1	3.59	3.59	0.00	82.5
4F1	3.42	3.41	0.00	92.0
5C1	3.83	3.80	0.00	152.1

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. 7.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

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	-
bend								
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00	
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00	
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00	
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00	
		-66.40 R	-51.07	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.41	8.31	1.41	HS 28.22	50.8
HS20	13.85	2.35	13.85	2.35	HS 47.03	84.7
2F1	22.42	5.86	22.42	5.86	0.00	87.9
3F1	15.67	3.62	15.67	3.62	0.00	83.3
4F1	14.62	3.10	14.62	3.10	0.00	83.6

5C1	17.31	3.76	17.31	3.76	0.00	150.2
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.836

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
 Moment Moment
 -2.8 -27.3

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	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00			
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00			
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00			
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00			
		-66.40 R	-51.07	148.28	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	8.88	1.35	8.02	1.53	HS 27.00	48.6
HS20	14.80	2.25	13.37	2.55	HS 45.01	81.0
2F1	23.95	5.60	21.64	6.36	0.00	84.1
3F1	16.75	3.46	15.12	3.93	0.00	79.7
4F1	15.62	2.96	14.11	3.36	0.00	80.0
5C1	18.49	3.59	16.70	4.07	0.00	143.7

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.	7.000		2F1
			3F1
			4F1
			5C1
Dead Load	Superimposed Dead Load		
(-) Shear (+) Shear	(-) Shear (+) Shear		
-0.7 0.7	-7.3 7.0		

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.0	65.2
OPER	151.3	-108.3	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	-37.61	37.80	-28.93	29.08	-28.93	28.78	-22.25	22.14
OPER	HS20	-37.61	37.80	-28.93	29.08	-28.93	28.78	-22.25	22.14
OPER	2F1	-21.46	21.52	-16.51	16.55	0.00	0.00	0.00	0.00
OPER	3F1	-30.17	30.29	-23.21	23.30	0.00	0.00	0.00	0.00
OPER	4F1	-31.71	31.88	-24.39	24.52	0.00	0.00	0.00	0.00
OPER	5C1	-28.29	28.58	-21.76	21.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.73	1.73	HS 34.50	62.1
HS20	2.88	2.88	HS 57.49	103.5
2F1	5.05	5.05	0.00	75.7
3F1	3.59	3.59	0.00	82.5
4F1	3.42	3.41	0.00	92.0
5C1	3.83	3.80	0.00	152.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -27.3

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	-
bend								
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00	
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00	
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00	
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00	
		-66.40 R	-51.07	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.31	1.41	8.31	1.41	HS 28.22	50.8
HS20	13.85	2.35	13.85	2.35	HS 47.03	84.7
2F1	22.42	5.86	22.42	5.86	0.00	87.9
3F1	15.67	3.62	15.67	3.62	0.00	83.3
4F1	14.62	3.10	14.62	3.10	0.00	83.6

5C1	17.31	3.76	17.31	3.76	0.00	150.2
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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. 7.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.3 -12.3

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	188.5	-153.1	169.3	-172.2
OPER	300.6C	-268.7	268.7	-300.6C	314.2	-255.1	282.2	-287.1

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	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89			
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46		
OPER	HS20	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89			
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46		
OPER	2F1	14.14 R	10.88	155.89	0.0	0.00	0.00	0.00	0.00		
		-36.46 L	-28.05	126.33	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.02 L	10.78	100.02	0.0	0.00	0.00	0.00	0.00		
		-52.31 L	-40.23	123.93	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.90 L	11.46	96.02	0.0	0.00	0.00	0.00	0.00		
		-56.28 L	-43.29	120.72	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.62 L	22.79	98.89	0.0	0.00	0.00	0.00	0.00		
		-45.81 L	-35.24	119.54	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	6.91	2.52	6.20	2.84	HS 50.38	90.7
HS20	11.51	4.20	10.34	4.72	HS 83.97	151.1
2F1	22.22	7.00	19.95	7.87	0.00	105.0
3F1	22.42	4.88	20.14	5.49	0.00	112.2
4F1	21.09	4.53	18.94	5.10	0.00	122.4
5C1	10.61	5.57	9.53	6.27	0.00	222.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

7.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	5.5

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	-4.22	32.97	-3.25	25.36	-4.17	26.00	-3.20	20.00
OPER	HS20	-4.22	32.97	-3.25	25.36	-4.17	26.00	-3.20	20.00
OPER	2F1	-2.73	19.36	-2.10	14.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.91	26.76	-3.01	20.58	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	27.60	-3.20	21.23	0.00	0.00	0.00	0.00
OPER	5C1	-4.03	25.16	-3.10	19.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.41	2.01	HS 40.15	72.3
HS20	29.01	3.35	HS 66.91	120.4
2F1	44.83	5.70	0.00	85.5
3F1	31.34	4.12	0.00	94.8
4F1	29.43	3.99	0.00	107.9
5C1	30.41	4.38	0.00	175.3

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. 7.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -12.3

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. 159.5	162.2	-173.1	162.2	-173.1	175.8	-159.5	175.8	-
OPER 265.8	279.4	-279.4	279.4	-279.4	293.0	-265.8	293.0	-

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	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89	
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46
OPER	HS20	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89	
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46
OPER	2F1	14.14 R	10.88	155.89	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.02 L	10.78	100.02	0.0	0.00	0.00	0.00	
		-52.31 L	-40.23	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.90 L	11.46	96.02	0.0	0.00	0.00	0.00	
		-56.28 L	-43.29	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.62 L	22.79	98.89	0.0	0.00	0.00	0.00	
		-45.81 L	-35.24	119.54	0.0	0.00	0.00	0.00	0.00

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	2.62	6.44	2.62	HS 52.50	94.5
HS20	10.73	4.38	10.73	4.38	HS 87.51	157.5
2F1	20.71	7.29	20.71	7.29	0.00	109.4
3F1	20.90	5.08	20.90	5.08	0.00	116.9
4F1	19.66	4.72	19.66	4.72	0.00	127.5

5C1	9.89	5.80	9.89	5.80	0.00	232.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 -0.8

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	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-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	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28			
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10		
OPER	HS20	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28			
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10		
OPER	2F1	40.60 R	31.23	158.28	0.0	0.00	0.00	0.00	0.00		
		-31.25 L	-24.04	126.33	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	49.01 R	37.70	162.28	0.0	0.00	0.00	0.00	0.00		
		-44.83 L	-34.49	123.93	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.87 R	34.52	166.28	0.0	0.00	0.00	0.00	0.00		
		-48.24 L	-37.11	120.72	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.71 L	45.16	101.28	0.0	0.00	0.00	0.00	0.00		
		-41.67 L	-32.05	121.93	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	2.88	3.46	2.58	3.87	HS 51.52	92.7
HS20	4.80	5.76	4.29	6.45	HS 85.87	154.6
2F1	7.43	8.57	6.64	9.59	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.5
4F1	6.72	5.55	6.01	6.21	0.00	149.8
5C1	5.14	6.43	4.59	7.19	0.00	183.7

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.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.5	67.1
OPER	151.3	-120.8	111.9

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	-4.22	27.81	-3.25	21.39	-4.98	22.96	-3.83	17.66
OPER	HS20	-4.22	27.81	-3.25	21.39	-4.98	22.96	-3.83	17.66
OPER	2F1	-2.73	16.92	-2.10	13.01	0.00	0.00	0.00	0.00
OPER	3F1	-3.91	22.91	-3.01	17.62	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	23.62	-3.20	18.17	0.00	0.00	0.00	0.00
OPER	5C1	-5.81	21.57	-4.47	16.59	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.55	2.41	HS 48.30	86.9
HS20	24.24	4.03	HS 80.49	144.9
2F1	44.24	6.62	0.00	99.2
3F1	30.92	4.88	0.00	112.3
4F1	29.04	4.74	0.00	127.9
5C1	20.78	5.19	0.00	207.5

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. 7.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

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	-
bend								
INV. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

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	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28	
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10
OPER	HS20	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28	
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10
OPER	2F1	40.60 R	31.23	158.28	0.0	0.00	0.00	0.00	
		-31.25 L	-24.04	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.01 R	37.70	162.28	0.0	0.00	0.00	0.00	
		-44.83 L	-34.49	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.87 R	34.52	166.28	0.0	0.00	0.00	0.00	
		-48.24 L	-37.11	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.71 L	45.16	101.28	0.0	0.00	0.00	0.00	
		-41.67 L	-32.05	121.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.58	96.4
HS20	4.47	5.99	4.47	5.99	HS 89.29	160.7
2F1	6.90	8.91	6.90	8.91	0.00	103.6
3F1	5.72	6.21	5.72	6.21	0.00	131.6
4F1	6.25	5.77	6.25	5.77	0.00	155.8

5C1	4.78	6.68	4.78	6.68	0.00	191.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 7.1

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	175.7	-165.9	156.5	-185.1
OPER	300.6C	-268.7	268.7	-300.6C	292.8	-276.4	260.9	-308.4

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	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68			
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00		
OPER	HS20	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68			
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00		
OPER	2F1	59.96 R	46.12	160.68	0.0	0.00	0.00	0.00			
		-26.04 L	-20.03	126.33	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.56 R	58.13	164.68	0.0	0.00	0.00	0.00			
		-37.36 L	-28.74	123.93	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.83 R	59.10	164.68	0.0	0.00	0.00	0.00			
		-40.20 L	-30.92	120.72	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.95 L	60.73	103.68	0.0	0.00	0.00	0.00			
		-39.92 L	-30.70	122.72	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	1.94	4.28	1.73	4.78	HS 34.51	62.1
HS20	3.23	7.14	2.88	7.96	HS 57.51	103.5
2F1	4.88	10.61	4.35	11.84	0.00	65.3
3F1	3.88	7.40	3.45	8.26	0.00	79.4
4F1	3.81	6.88	3.39	7.67	0.00	91.7
5C1	3.71	6.93	3.30	7.73	0.00	132.2

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.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.3	0.0	2.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-71.5	68.1
OPER	151.3	-119.2	113.5

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	-5.44	22.69	-4.18	17.45	-7.46	19.75	-5.74	15.20
OPER	HS20	-5.44	22.69	-4.18	17.45	-7.46	19.75	-5.74	15.20
OPER	2F1	-3.90	14.29	-3.00	10.99	0.00	0.00	0.00	0.00
OPER	3F1	-4.16	18.91	-3.20	14.54	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	19.46	-3.20	14.97	0.00	0.00	0.00	0.00
OPER	5C1	-7.82	17.98	-6.01	13.83	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.59	3.00	HS 60.04	108.1
HS20	15.98	5.00	HS 100.07	180.1
2F1	30.59	7.94	0.00	119.2
3F1	28.65	6.01	0.00	138.1
4F1	28.65	5.83	0.00	157.5
5C1	15.25	6.32	0.00	252.6

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 0.7
Superimposed Dead Load Moment 7.1

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. 172.3	170.8	-164.5	170.8	-164.5	163.0	-172.3	163.0	-
OPER 287.2	279.4	-279.4	279.4	-279.4	271.6	-287.2	271.6	-

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	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68	
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00
OPER	HS20	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68	
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00
OPER	2F1	59.96 R	46.12	160.68	0.0	0.00	0.00	0.00	
		-26.04 L	-20.03	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.56 R	58.13	164.68	0.0	0.00	0.00	0.00	
		-37.36 L	-28.74	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.83 R	59.10	164.68	0.0	0.00	0.00	0.00	
		-40.20 L	-30.92	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.95 L	60.73	103.68	0.0	0.00	0.00	0.00	
		-39.92 L	-30.70	122.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	4.45	1.80	4.45	HS 35.93	64.7
HS20	2.99	7.41	2.99	7.41	HS 59.88	107.8
2F1	4.53	11.03	4.53	11.03	0.00	67.9
3F1	3.59	7.69	3.59	7.69	0.00	82.7
4F1	3.54	7.14	3.54	7.14	0.00	95.5

5C1	3.44	7.20	3.44	7.20	0.00	137.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 1.1
Superimposed Dead Load Moment 11.5

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	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

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	101.20	R	77.84	181.07	0.0	81.04	62.34	153.07		
		-30.99	L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00	
OPER	HS20	101.20	R	77.84	181.07	0.0	81.04	62.34	153.07		
		-30.99	L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00	
OPER	2F1	70.62	R	54.33	163.07	0.0	0.00	0.00	0.00		
		-20.83	L	-16.03	126.33	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	89.38	R	68.76	163.07	0.0	0.00	0.00	0.00		
		-29.89	L	-22.99	123.93	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	95.46	R	73.43	167.07	0.0	0.00	0.00	0.00		
		-32.16	L	-24.74	120.72	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	90.04	R	69.26	165.07	0.0	0.00	0.00	0.00		
		-39.49	R	-30.38	185.72	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	5.45	1.52	6.07	HS 30.36	54.6
HS20	2.85	9.08	2.53	10.11	HS 50.59	91.1
2F1	4.08	13.50	3.62	15.04	0.00	54.4
3F1	3.22	9.41	2.86	10.48	0.00	65.9
4F1	3.02	8.75	2.68	9.74	0.00	72.4
5C1	3.20	7.12	2.84	7.93	0.00	113.7

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.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.1	0.0	1.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.6	69.1
OPER	151.3	-117.6	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	-10.44	18.94	-8.03	14.57	-10.27	16.49	-7.90	12.69
OPER	HS20	-10.44	18.94	-8.03	14.57	-10.27	16.49	-7.90	12.69
OPER	2F1	-6.14	11.59	-4.73	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.24	14.90	-5.57	11.46	0.00	0.00	0.00	0.00
OPER	4F1	-6.14	15.05	-4.72	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.99	14.71	-7.68	11.31	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.76	3.65	HS 72.97	131.3
HS20	11.27	6.08	HS 121.61	218.9
2F1	19.14	9.94	0.00	149.1
3F1	16.24	7.73	0.00	177.7
4F1	19.16	7.65	0.00	206.5
5C1	11.77	7.83	0.00	313.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.5

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. 175.2	172.7	-162.6	172.7	-162.6	160.0	-175.2	160.0	-
OPER 292.1	279.4	-279.4	279.4	-279.4	266.7	-292.1	266.7	-

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	101.20 R	77.84	181.07	0.0	81.04	62.34	153.07	
		-30.99 L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00
OPER	HS20	101.20 R	77.84	181.07	0.0	81.04	62.34	153.07	
		-30.99 L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00
OPER	2F1	70.62 R	54.33	163.07	0.0	0.00	0.00	0.00	
		-20.83 L	-16.03	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.38 R	68.76	163.07	0.0	0.00	0.00	0.00	
		-29.89 L	-22.99	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	95.46 R	73.43	167.07	0.0	0.00	0.00	0.00	
		-32.16 L	-24.74	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.04 R	69.26	165.07	0.0	0.00	0.00	0.00	
		-39.49 R	-30.38	185.72	0.0	0.00	0.00	0.00	0.00

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	5.66	1.58	5.66	HS 31.63	56.9
HS20	2.64	9.43	2.64	9.43	HS 52.72	94.9
2F1	3.78	14.02	3.78	14.02	0.00	56.7
3F1	2.98	9.77	2.98	9.77	0.00	68.6
4F1	2.79	9.08	2.79	9.08	0.00	75.4

5C1	2.96	7.40	2.96	7.40	0.00	118.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.837

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.24		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	11.96	1.00	33000.	73.86	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 1.2
 Superimposed Dead Load Moment 12.5

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	172.2	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	287.0	-282.3	255.0	-314.3

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	98.70	R	75.92	169.46	0.0	86.01	66.16	155.46		
		-30.52	R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00	
OPER	HS20	98.70	R	75.92	169.46	0.0	86.01	66.16	155.46		
		-30.52	R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00	
OPER	2F1	72.01	R	55.39	165.46	0.0	0.00	0.00	0.00		
		-18.86	R	-14.51	184.59	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	95.59	L	73.53	145.46	0.0	0.00	0.00	0.00		
		-26.98	R	-20.75	186.98	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	99.25	L	76.34	141.46	0.0	0.00	0.00	0.00		
		-28.91	R	-22.24	190.20	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	93.55	L	71.96	104.46	0.0	0.00	0.00	0.00		
		-40.83	R	-31.41	186.59	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	1.75	5.55	1.55	6.18	HS 31.00	55.8
HS20	2.91	9.25	2.58	10.30	HS 51.67	93.0
2F1	3.99	14.97	3.54	16.67	0.00	53.1
3F1	3.00	10.47	2.67	11.65	0.00	61.4
4F1	2.89	9.76	2.57	10.87	0.00	69.4
5C1	3.07	6.91	2.73	7.70	0.00	109.0

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.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-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	-15.01	15.05	-11.54	11.58	-13.32	13.27	-10.25	10.21
OPER	HS20	-15.01	15.05	-11.54	11.58	-13.32	13.27	-10.25	10.21
OPER	2F1	-8.64	8.91	-6.64	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-10.72	11.05	-8.25	8.50	0.00	0.00	0.00	0.00
OPER	4F1	-10.08	10.52	-7.75	8.10	0.00	0.00	0.00	0.00
OPER	5C1	-12.26	11.96	-9.43	9.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.64	4.66	HS 92.75	166.9
HS20	7.73	7.76	HS 154.58	278.2
2F1	13.43	13.10	0.00	196.5
3F1	10.82	10.57	0.00	243.1
4F1	11.51	11.10	0.00	299.6
5C1	9.46	9.76	0.00	378.2

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 1.2
Superimposed Dead Load Moment 12.5

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. 175.8	173.1	-162.2	173.1	-162.2	159.5	-175.8	159.5	-
OPER 293.0	279.4	-279.4	279.4	-279.4	265.8	-293.0	265.8	-

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	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46	
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00
OPER	HS20	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46	
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00
OPER	2F1	72.01 R	55.39	165.46	0.0	0.00	0.00	0.00	
		-18.86 R	-14.51	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	95.59 L	73.53	145.46	0.0	0.00	0.00	0.00	
		-26.98 R	-20.75	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	99.25 L	76.34	141.46	0.0	0.00	0.00	0.00	
		-28.91 R	-22.24	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.55 L	71.96	104.46	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	186.59	0.0	0.00	0.00	0.00	0.00

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	5.76	1.62	5.76	HS 32.31	58.2
HS20	2.69	9.60	2.69	9.60	HS 53.85	96.9
2F1	3.69	15.54	3.69	15.54	0.00	55.4
3F1	2.78	10.86	2.78	10.86	0.00	63.9
4F1	2.68	10.14	2.68	10.14	0.00	72.3

5C1	2.84	7.18	2.84	7.18	0.00	113.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 0.9
Superimposed Dead Load Moment 9.5

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	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.1

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	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85			
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00		
OPER	HS20	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85			
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00		
OPER	2F1	71.35 L	54.88	147.85	0.0	0.00	0.00	0.00			
		-25.39 R	-19.53	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.64 L	69.72	147.85	0.0	0.00	0.00	0.00			
		-36.32 R	-27.94	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.79 L	74.46	143.85	0.0	0.00	0.00	0.00			
		-38.93 R	-29.95	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	88.69 L	68.22	106.85	0.0	0.00	0.00	0.00			
		-43.23 R	-33.25	188.20	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	1.69	4.07	1.50	4.54	HS 30.06	54.1
HS20	2.82	6.79	2.51	7.57	HS 50.09	90.2
2F1	4.07	10.99	3.62	12.25	0.00	54.3
3F1	3.20	7.68	2.85	8.56	0.00	65.5
4F1	3.00	7.17	2.67	7.99	0.00	72.0
5C1	3.27	6.46	2.91	7.20	0.00	116.5

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.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) 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	-19.05	10.63	-14.66	8.17	-16.54	10.19	-12.72	7.84
OPER	HS20	-19.05	10.63	-14.66	8.17	-16.54	10.19	-12.72	7.84
OPER	2F1	-11.29	6.36	-8.68	4.90	0.00	0.00	0.00	0.00
OPER	3F1	-14.50	7.46	-11.16	5.74	0.00	0.00	0.00	0.00
OPER	4F1	-14.61	6.23	-11.24	4.79	0.00	0.00	0.00	0.00
OPER	5C1	-14.89	9.39	-11.45	7.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.60	6.69	HS 71.94	129.5
HS20	5.99	11.15	HS 119.89	215.8
2F1	10.12	18.62	0.00	151.8
3F1	7.88	15.88	0.00	181.2
4F1	7.82	19.01	0.00	211.0
5C1	7.67	12.63	0.00	306.9

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. 7.600 2F1
3F1
4F1
5C1

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

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. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
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 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	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85	
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00
OPER	HS20	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85	
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00
OPER	2F1	71.35 L	54.88	147.85	0.0	0.00	0.00	0.00	
		-25.39 R	-19.53	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.64 L	69.72	147.85	0.0	0.00	0.00	0.00	
		-36.32 R	-27.94	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.79 L	74.46	143.85	0.0	0.00	0.00	0.00	
		-38.93 R	-29.95	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	88.69 L	68.22	106.85	0.0	0.00	0.00	0.00	
		-43.23 R	-33.25	188.20	0.0	0.00	0.00	0.00	0.00

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	4.23	1.57	4.23	HS 31.31	56.4
HS20	2.61	7.05	2.61	7.05	HS 52.18	93.9
2F1	3.77	11.42	3.77	11.42	0.00	56.5
3F1	2.97	7.98	2.97	7.98	0.00	68.2
4F1	2.78	7.45	2.78	7.45	0.00	75.0

5C1 3.03 6.70 3.03 6.70 0.00 121.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 0.3
Superimposed Dead Load Moment 3.1

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	178.4	-163.2	159.2	-182.4
OPER	300.6C	-268.7	268.7	-300.6C	297.3	-272.0	265.3	-304.0

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	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24			
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00		
OPER	HS20	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24			
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00		
OPER	2F1	61.53 L	47.33	150.24	0.0	0.00	0.00	0.00			
		-31.92 R	-24.56	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	77.76 L	59.81	146.24	0.0	0.00	0.00	0.00			
		-45.67 R	-35.13	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	79.23 L	60.95	146.24	0.0	0.00	0.00	0.00			
		-48.95 R	-37.65	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	75.97 L	58.44	144.24	0.0	0.00	0.00	0.00			
		-46.94 R	-36.11	188.20	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	1.91	3.16	1.71	3.53	HS 34.14	61.4
HS20	3.19	5.26	2.85	5.88	HS 56.90	102.4
2F1	4.83	8.52	4.31	9.52	0.00	64.7
3F1	3.82	5.96	3.41	6.66	0.00	78.5
4F1	3.75	5.56	3.35	6.21	0.00	90.4
5C1	3.91	5.80	3.49	6.48	0.00	139.7

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.	7.700		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	72.1
OPER	151.3	-112.6	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	-22.82	5.73	-17.55	4.41	-19.82	7.33	-15.24	5.64
OPER	HS20	-22.82	5.73	-17.55	4.41	-19.82	7.33	-15.24	5.64
OPER	2F1	-13.99	4.04	-10.76	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.48	4.24	-14.21	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.08	3.34	-14.68	2.57	0.00	0.00	0.00	0.00
OPER	5C1	-17.87	7.03	-13.75	5.41	0.00	0.00	0.00	0.00

Veh.	Rating				Load Capacity (tons)
	(-)	Factor (+)	Rating Value	Shear	
HS20	2.96	9.83	HS 59.22		106.6
HS20	4.93	16.39	HS 98.69		177.6
2F1	8.05	29.77	0.00		120.7
3F1	6.09	28.34	0.00		140.2
4F1	5.90	35.97	0.00		159.4
5C1	6.30	17.08	0.00		252.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.1

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. 169.7	169.0	-166.3	169.0	-166.3	165.6	-169.7	165.6	-
OPER 282.8	279.4	-279.4	279.4	-279.4	276.0	-282.8	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	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24	
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00
OPER	HS20	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24	
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00
OPER	2F1	61.53 L	47.33	150.24	0.0	0.00	0.00	0.00	
		-31.92 R	-24.56	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	77.76 L	59.81	146.24	0.0	0.00	0.00	0.00	
		-45.67 R	-35.13	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	79.23 L	60.95	146.24	0.0	0.00	0.00	0.00	
		-48.95 R	-37.65	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	75.97 L	58.44	144.24	0.0	0.00	0.00	0.00	
		-46.94 R	-36.11	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	3.28	1.78	3.28	HS 35.52	63.9
HS20	2.96	5.47	2.96	5.47	HS 59.20	106.6
2F1	4.49	8.86	4.49	8.86	0.00	67.3
3F1	3.55	6.19	3.55	6.19	0.00	81.6
4F1	3.48	5.78	3.48	5.78	0.00	94.1

5C1	3.63	6.02	3.63	6.02	0.00	145.3
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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	
Fy (yield)	18150.	24750.	0.	0.
Fy (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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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
-0.7 -6.8

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	184.9	-156.7	165.7	-175.8
OPER	300.6C	-268.7	268.7	-300.6C	308.2	-261.1	276.2	-293.1

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	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63			
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10		
OPER	HS20	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63			
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10		
OPER	2F1	42.76 L	32.90	152.63	0.0	0.00	0.00	0.00			
		-38.45 R	-29.58	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.25 L	40.20	148.63	0.0	0.00	0.00	0.00			
		-55.01 R	-42.32	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.39 L	37.22	144.63	0.0	0.00	0.00	0.00			
		-58.96 R	-45.36	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.89 L	39.92	146.63	0.0	0.00	0.00	0.00			
		-51.32 R	-39.47	188.98	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	2.80	2.52	2.51	2.83	HS 50.10	90.2
HS20	4.66	4.20	4.18	4.71	HS 83.50	150.3
2F1	7.21	6.79	6.46	7.62	0.00	96.9
3F1	5.90	4.75	5.29	5.33	0.00	109.2
4F1	6.37	4.43	5.71	4.97	0.00	119.6
5C1	5.94	5.09	5.32	5.71	0.00	203.5

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	-4.9	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Available Capacity (+)	for LL+I
INV.	90.8	-66.6	73.1	
OPER	151.3	-111.0	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	-27.47	3.11	-21.13	2.39	-23.07	4.78	-17.75	3.67
OPER	HS20	-27.47	3.11	-21.13	2.39	-23.07	4.78	-17.75	3.67
OPER	2F1	-16.65	2.18	-12.81	1.68	0.00	0.00	0.00	0.00
OPER	3F1	-22.50	3.12	-17.31	2.40	0.00	0.00	0.00	0.00
OPER	4F1	-23.34	3.34	-17.95	2.57	0.00	0.00	0.00	0.00
OPER	5C1	-21.74	4.95	-16.72	3.81	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.42	15.30	HS 48.49	87.3
HS20	4.04	25.49	HS 80.82	145.5
2F1	6.66	55.91	0.00	100.0
3F1	4.93	38.97	0.00	113.5
4F1	4.76	36.45	0.00	128.4
5C1	5.11	24.58	0.00	204.2

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. 7.800 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Moment Moment
-0.7 -6.8

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. 163.1	164.6	-170.7	164.6	-170.7	172.2	-163.1	172.2	-
OPER 271.8	279.4	-279.4	279.4	-279.4	287.0	-271.8	287.0	-

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	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63	
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10
OPER	HS20	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63	
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10
OPER	2F1	42.76 L	32.90	152.63	0.0	0.00	0.00	0.00	
		-38.45 R	-29.58	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.25 L	40.20	148.63	0.0	0.00	0.00	0.00	
		-55.01 R	-42.32	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.39 L	37.22	144.63	0.0	0.00	0.00	0.00	
		-58.96 R	-45.36	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.89 L	39.92	146.63	0.0	0.00	0.00	0.00	
		-51.32 R	-39.47	188.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.60	2.62	2.60	2.62	HS 52.05	93.7
HS20	4.34	4.37	4.34	4.37	HS 86.74	156.1
2F1	6.71	7.07	6.71	7.07	0.00	100.7
3F1	5.49	4.94	5.49	4.94	0.00	113.7
4F1	5.93	4.61	5.93	4.61	0.00	124.5

5C1	5.53	5.30	5.53	5.30	0.00	211.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 7.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.1 -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	193.8	-147.8	174.6	-167.0
OPER	300.6C	-268.7	268.7	-300.6C	323.0	-246.3	291.0	-278.3

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	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03			
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98	153.07		
OPER	HS20	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03			
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98	153.07		
OPER	2F1	16.36 L	12.58	155.03	0.0	0.00	0.00	0.00			
		-44.99 R	-34.60	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.18 L	10.90	151.03	0.0	0.00	0.00	0.00			
		-64.36 R	-49.51	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	7.94 L	6.11	119.93	0.0	0.00	0.00	0.00			
		-68.98 R	-53.06	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.63 L	18.18	114.03	0.0	0.00	0.00	0.00			
		-59.16 R	-45.50	193.77	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	8.30	1.96	7.47	2.22	HS 39.24	70.6
HS20	13.82	3.27	12.46	3.69	HS 65.41	117.7
2F1	19.75	5.47	17.79	6.19	0.00	82.1
3F1	22.78	3.83	20.53	4.32	0.00	88.0
4F1	40.66	3.57	36.63	4.03	0.00	96.4
5C1	13.67	4.16	12.31	4.70	0.00	166.5

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.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.6	-6.4	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.4

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	-32.69	3.24	-25.14	2.49	-26.19	3.21	-20.15	2.47
OPER	HS20	-32.69	3.24	-25.14	2.49	-26.19	3.21	-20.15	2.47
OPER	2F1	-19.16	2.18	-14.73	1.68	0.00	0.00	0.00	0.00
OPER	3F1	-26.41	3.12	-20.31	2.40	0.00	0.00	0.00	0.00
OPER	4F1	-27.26	3.36	-20.97	2.59	0.00	0.00	0.00	0.00
OPER	5C1	-25.54	3.18	-19.65	2.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	22.85	HS 40.15	72.3
HS20	3.35	38.09	HS 66.92	120.5
2F1	5.71	56.65	0.00	85.6
3F1	4.14	39.49	0.00	95.3
4F1	4.01	36.70	0.00	108.3
5C1	4.28	38.75	0.00	171.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.1
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. 154.2	158.7	-176.6	158.7	-176.6	181.1	-154.2	181.1	-
OPER 257.0	279.4	-279.4	279.4	-279.4	301.8	-257.0	301.8	-

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	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98
OPER	HS20	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98
OPER	2F1	16.36 L	12.58	155.03	0.0	0.00	0.00	0.00
		-44.99 R	-34.60	184.59	0.0	0.00	0.00	0.00
OPER	3F1	14.18 L	10.90	151.03	0.0	0.00	0.00	0.00
		-64.36 R	-49.51	186.98	0.0	0.00	0.00	0.00
OPER	4F1	7.94 L	6.11	119.93	0.0	0.00	0.00	0.00
		-68.98 R	-53.06	190.20	0.0	0.00	0.00	0.00
OPER	5C1	23.63 L	18.18	114.03	0.0	0.00	0.00	0.00
		-59.16 R	-45.50	193.77	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	7.75	2.05	7.75	2.05	HS 40.96	73.7
HS20	12.92	3.41	12.92	3.41	HS 68.26	122.9
2F1	18.45	5.71	18.45	5.71	0.00	85.7
3F1	21.29	3.99	21.29	3.99	0.00	91.9
4F1	37.99	3.73	37.99	3.73	0.00	100.6

5C1	12.77	4.34	12.77	4.34	0.00	173.8
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.454

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		25.12		104.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

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	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00	0.00	0.00	
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00	0.00	0.00	
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00	0.00	0.00	
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00	0.00	0.00	
		-81.29 L	-62.53	162.59	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	13.23	1.22	11.99	1.39	HS 24.33	43.8
HS20	22.05	2.03	19.99	2.31	HS 40.55	73.0
2F1	32.80	4.42	29.73	5.04	0.00	66.3
3F1	22.86	2.96	20.73	3.38	0.00	68.2
4F1	21.25	2.48	19.26	2.83	0.00	67.1
5C1	26.25	2.80	23.79	3.19	0.00	112.0

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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.4	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.6	63.9
OPER	151.3	-107.7	106.5

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	-32.69	40.27	-25.14	30.98	-26.19	29.34	-20.15	22.57
OPER	HS20	-32.69	40.27	-25.14	30.98	-26.19	29.34	-20.15	22.57
OPER	2F1	-19.16	22.19	-14.73	17.07	0.00	0.00	0.00	0.00
OPER	3F1	-26.41	31.72	-20.31	24.40	0.00	0.00	0.00	0.00
OPER	4F1	-27.26	33.90	-20.97	26.07	0.00	0.00	0.00	0.00
OPER	5C1	-25.54	30.19	-19.65	23.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.72	1.59	HS 31.73	57.1
HS20	2.86	2.64	HS 52.88	95.2
2F1	5.03	4.80	0.00	72.0
3F1	3.59	3.36	0.00	77.2
4F1	3.42	3.14	0.00	84.8
5C1	3.70	3.53	0.00	141.1

SERVICEABILITY 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 -3.8
Superimposed Dead Load Moment -37.3

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. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

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	15.49 L	11.92	110.72	0.0	11.80	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	176.98	157.85
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	176.98	157.85
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	
		-81.29 L	-62.53	162.59	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	12.41	1.27	12.41	1.27	HS 25.48	45.9
HS20	20.68	2.12	20.68	2.12	HS 42.46	76.4
2F1	30.76	4.63	30.76	4.63	0.00	69.4
3F1	21.44	3.11	21.44	3.11	0.00	71.4
4F1	19.93	2.60	19.93	2.60	0.00	70.3

5C1	24.62	2.93	24.62	2.93	0.00	117.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

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	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93			
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85		
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93			
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85		
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00			
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00			
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00			
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00			
		-81.29 L	-62.53	162.59	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	13.23	1.22	11.99	1.39	HS 24.33	43.8
HS20	22.05	2.03	19.99	2.31	HS 40.55	73.0
2F1	32.80	4.42	29.73	5.04	0.00	66.3
3F1	22.86	2.96	20.73	3.38	0.00	68.2
4F1	21.25	2.48	19.26	2.83	0.00	67.1
5C1	26.25	2.80	23.79	3.19	0.00	112.0

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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.9	-7.8	9.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.6	63.9
OPER	151.3	-107.7	106.5

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	-37.63	40.27	-28.95	30.98	-29.08	29.34	-22.37	22.57
OPER	HS20	-37.63	40.27	-28.95	30.98	-29.08	29.34	-22.37	22.57
OPER	2F1	-21.40	22.19	-16.46	17.07	0.00	0.00	0.00	0.00
OPER	3F1	-30.04	31.72	-23.11	24.40	0.00	0.00	0.00	0.00
OPER	4F1	-31.53	33.90	-24.26	26.07	0.00	0.00	0.00	0.00
OPER	5C1	-29.11	30.19	-22.39	23.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.72	1.59	HS 31.73	57.1
HS20	2.86	2.64	HS 52.88	95.2
2F1	5.03	4.80	0.00	72.0
3F1	3.59	3.36	0.00	77.2
4F1	3.42	3.14	0.00	84.8
5C1	3.70	3.53	0.00	141.1

SERVICEABILITY 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 -3.8
Superimposed Dead Load Moment -37.3

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. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

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	15.49 L	11.92	110.72	0.0	11.80	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	176.98	157.85
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	176.98	157.85
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00
		-81.29 L	-62.53	162.59	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.41	1.27	12.41	1.27	HS 25.48	45.9
HS20	20.68	2.12	20.68	2.12	HS 42.46	76.4
2F1	30.76	4.63	30.76	4.63	0.00	69.4
3F1	21.44	3.11	21.44	3.11	0.00	71.4
4F1	19.93	2.60	19.93	2.60	0.00	70.3

5C1	24.62	2.93	24.62	2.93	0.00	117.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
-1.8 -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.	180.4C	-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	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81			
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77		
OPER	HS20	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81			
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77		
OPER	2F1	11.27 R	8.67	179.81	0.0	0.00	0.00	0.00			
		-34.99 L	-26.91	150.24	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 L	10.35	123.93	0.0	0.00	0.00	0.00			
		-50.20 L	-38.61	147.85	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.30 L	11.00	119.93	0.0	0.00	0.00	0.00			
		-54.01 L	-41.55	144.63	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	26.43 L	20.33	122.81	0.0	0.00	0.00	0.00			
		-48.78 R	-37.53	202.46	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	8.22	2.47	7.40	2.79	HS 49.48	89.1
HS20	13.70	4.12	12.34	4.65	HS 82.46	148.4
2F1	28.40	7.12	25.56	8.04	0.00	106.9
3F1	23.79	4.97	21.41	5.60	0.00	114.2
4F1	22.38	4.61	20.14	5.21	0.00	124.6
5C1	12.11	5.11	10.90	5.77	0.00	204.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.100

HS20 HS20

2F1

3F1

4F1

5C1

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

0.8

0.0

7.5

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	-0.62	35.84	-0.48	27.57	-1.38	26.94	-1.06	20.72
OPER	HS20	-0.62	35.84	-0.48	27.57	-1.38	26.94	-1.06	20.72
OPER	2F1	-0.44	20.44	-0.34	15.72	0.00	0.00	0.00	0.00
OPER	3F1	-0.62	28.72	-0.48	22.10	0.00	0.00	0.00	0.00
OPER	4F1	-0.67	30.04	-0.51	23.11	0.00	0.00	0.00	0.00
OPER	5C1	-0.94	27.19	-0.73	20.92	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	54.28	1.81	HS 36.20	65.2
HS20	90.46	3.02	HS 60.33	108.6
2F1	286.15	5.29	0.00	79.3
3F1	199.46	3.76	0.00	86.6
4F1	186.57	3.60	0.00	97.2
5C1	132.05	3.98	0.00	159.0

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. 8.100 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-1.8 -17.6

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. 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	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81	
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77
OPER	HS20	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81	
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77
OPER	2F1	11.27 R	8.67	179.81	0.0	0.00	0.00	0.00	
		-34.99 L	-26.91	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.35	123.93	0.0	0.00	0.00	0.00	
		-50.20 L	-38.61	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.30 L	11.00	119.93	0.0	0.00	0.00	0.00	
		-54.01 L	-41.55	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.43 L	20.33	122.81	0.0	0.00	0.00	0.00	
		-48.78 R	-37.53	202.46	0.0	0.00	0.00	0.00	0.00

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	2.58	7.68	2.58	HS 51.61	92.9
HS20	12.80	4.30	12.80	4.30	HS 86.02	154.8
2F1	26.51	7.43	26.51	7.43	0.00	111.5
3F1	22.21	5.18	22.21	5.18	0.00	119.1
4F1	20.89	4.81	20.89	4.81	0.00	130.0

5C1 11.31 5.33 11.31 5.33 0.00 213.2

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 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. 8.200

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 Moment Superimposed Dead Load Moment
-0.2 -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.	180.4C	-161.2	161.2	-180.4C	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

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	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20			
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02		
OPER	HS20	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20			
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02		
OPER	2F1	40.21 R	30.93	182.20	0.0	0.00	0.00	0.00			
		-31.10 L	-23.92	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	48.36 R	37.20	186.20	0.0	0.00	0.00	0.00			
		-44.62 L	-34.32	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.16 R	33.97	190.20	0.0	0.00	0.00	0.00			
		-48.01 L	-36.93	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.23 L	44.79	125.20	0.0	0.00	0.00	0.00			
		-42.00 L	-32.31	145.85	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	2.94	3.46	2.63	3.88	HS 52.56	94.6
HS20	4.90	5.77	4.38	6.47	HS 87.60	157.7
2F1	7.52	8.59	6.72	9.62	0.00	100.8
3F1	6.25	5.99	5.59	6.70	0.00	128.5
4F1	6.84	5.56	6.12	6.23	0.00	150.2
5C1	5.19	6.36	4.64	7.12	0.00	185.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.8	65.8
OPER	151.3	-123.0	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	-1.15	30.85	-0.88	23.73	-2.96	24.31	-2.28	18.70
OPER	HS20	-1.15	30.85	-0.88	23.73	-2.96	24.31	-2.28	18.70
OPER	2F1	-1.49	18.38	-1.14	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.20	25.31	-0.92	19.47	0.00	0.00	0.00	0.00
OPER	4F1	-0.67	25.80	-0.51	19.85	0.00	0.00	0.00	0.00
OPER	5C1	-2.56	23.87	-1.97	18.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	24.92	2.13	HS 42.68	76.8
HS20	41.53	3.56	HS 71.14	128.0
2F1	82.67	5.97	0.00	89.5
3F1	102.65	4.34	0.00	99.7
4F1	184.15	4.25	0.00	114.8
5C1	48.03	4.60	0.00	183.9

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. 8.200 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.4

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. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

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	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20	
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02
OPER	HS20	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20	
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02
OPER	2F1	40.21 R	30.93	182.20	0.0	0.00	0.00	0.00	
		-31.10 L	-23.92	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	48.36 R	37.20	186.20	0.0	0.00	0.00	0.00	
		-44.62 L	-34.32	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.16 R	33.97	190.20	0.0	0.00	0.00	0.00	
		-48.01 L	-36.93	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.23 L	44.79	125.20	0.0	0.00	0.00	0.00	
		-42.00 L	-32.31	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.60	2.73	3.60	HS 54.65	98.4
HS20	4.55	6.01	4.55	6.01	HS 91.08	163.9
2F1	6.99	8.93	6.99	8.93	0.00	104.8
3F1	5.81	6.23	5.81	6.23	0.00	133.6
4F1	6.36	5.79	6.36	5.79	0.00	156.3

5C1	4.82	6.61	4.82	6.61	0.00	193.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
1.1 11.3

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	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.1	256.3	-313.0

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	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59			
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02		
OPER	HS20	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59			
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02		
OPER	2F1	63.71 R	49.01	184.59	0.0	0.00	0.00	0.00			
		-27.21 L	-20.93	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.13 R	62.41	188.59	0.0	0.00	0.00	0.00			
		-39.04 L	-30.03	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.23 R	63.25	188.59	0.0	0.00	0.00	0.00			
		-42.01 L	-32.32	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.63 L	64.33	127.59	0.0	0.00	0.00	0.00			
		-36.75 L	-28.27	145.85	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	4.17	1.55	4.64	HS 31.09	56.0
HS20	2.91	6.94	2.59	7.73	HS 51.82	93.3
2F1	4.52	10.33	4.02	11.50	0.00	60.3
3F1	3.55	7.20	3.16	8.02	0.00	72.6
4F1	3.51	6.69	3.12	7.45	0.00	84.1
5C1	3.45	7.65	3.06	8.52	0.00	122.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

8.300

HS20 HS20

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	111.3

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	-3.32	25.37	-2.55	19.52	-4.92	21.50	-3.79	16.54
OPER	HS20	-3.32	25.37	-2.55	19.52	-4.92	21.50	-3.79	16.54
OPER	2F1	-3.02	16.06	-2.32	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.21	21.53	-2.47	16.56	0.00	0.00	0.00	0.00
OPER	4F1	-2.34	22.18	-1.80	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.51	20.73	-3.47	15.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.80	2.63	HS 52.66	94.8
HS20	24.67	4.39	HS 87.77	158.0
2F1	40.17	6.93	0.00	104.0
3F1	37.78	5.17	0.00	118.9
4F1	51.79	5.02	0.00	135.5
5C1	26.91	5.37	0.00	214.9

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. 8.300 2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

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. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

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	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59	
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02
OPER	HS20	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59	
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02
OPER	2F1	63.71 R	49.01	184.59	0.0	0.00	0.00	0.00	
		-27.21 L	-20.93	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.13 R	62.41	188.59	0.0	0.00	0.00	0.00	
		-39.04 L	-30.03	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.23 R	63.25	188.59	0.0	0.00	0.00	0.00	
		-42.01 L	-32.32	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.63 L	64.33	127.59	0.0	0.00	0.00	0.00	
		-36.75 L	-28.27	145.85	0.0	0.00	0.00	0.00	0.00

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	4.32	1.62	4.32	HS 32.39	58.3
HS20	2.70	7.21	2.70	7.21	HS 53.99	97.2
2F1	4.19	10.72	4.19	10.72	0.00	62.9
3F1	3.29	7.47	3.29	7.47	0.00	75.7
4F1	3.25	6.95	3.25	6.95	0.00	87.7

5C1	3.19	7.94	3.19	7.94	0.00	127.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 2.0
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.	180.4C	-161.2	161.2	-180.4C	166.9	-174.7	147.7	-193.9
OPER	300.6C	-268.7	268.7	-300.6C	278.2	-291.1	246.2	-323.1

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	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98			
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00		
OPER	HS20	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98			
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00		
OPER	2F1	79.32 R	61.01	186.98	0.0	0.00	0.00	0.00			
		-23.33 L	-17.94	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.67 R	77.44	186.98	0.0	0.00	0.00	0.00			
		-33.46 L	-25.74	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.42 R	82.63	190.98	0.0	0.00	0.00	0.00			
		-36.01 L	-27.70	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	100.66 R	77.43	188.98	0.0	0.00	0.00	0.00			
		-31.50 L	-24.23	145.85	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	1.45	5.03	1.28	5.59	HS 25.68	46.2
HS20	2.42	8.39	2.14	9.31	HS 42.80	77.0
2F1	3.51	12.48	3.10	13.85	0.00	46.6
3F1	2.76	8.70	2.44	9.66	0.00	56.2
4F1	2.59	8.09	2.29	8.97	0.00	61.9
5C1	2.76	9.24	2.45	10.26	0.00	97.8

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.	8.400		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	-7.37	20.41	-5.67	15.70	-7.23	18.56	-5.56	14.27
OPER	HS20	-7.37	20.41	-5.67	15.70	-7.23	18.56	-5.56	14.27
OPER	2F1	-4.85	13.51	-3.73	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-5.68	17.46	-4.37	13.43	0.00	0.00	0.00	0.00
OPER	4F1	-4.81	18.13	-3.70	13.95	0.00	0.00	0.00	0.00
OPER	5C1	-6.74	17.66	-5.18	13.59	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.75	3.32	HS 66.41	119.5
HS20	16.25	5.53	HS 110.68	199.2
2F1	24.67	8.36	0.00	125.4
3F1	21.07	6.47	0.00	148.8
4F1	24.89	6.23	0.00	168.2
5C1	17.78	6.39	0.00	255.8

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. 8.400 2F1
3F1
4F1
5C1

Dead Load Moment 2.0
Superimposed Dead Load Moment 20.5

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. 181.1	176.6	-158.7	176.6	-158.7	154.2	-181.1	154.2	-
OPER 301.9	279.4	-279.4	279.4	-279.4	256.9	-301.9	256.9	-

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	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98	
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00
OPER	HS20	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98	
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00
OPER	2F1	79.32 R	61.01	186.98	0.0	0.00	0.00	0.00	
		-23.33 L	-17.94	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.67 R	77.44	186.98	0.0	0.00	0.00	0.00	
		-33.46 L	-25.74	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.42 R	82.63	190.98	0.0	0.00	0.00	0.00	
		-36.01 L	-27.70	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	100.66 R	77.43	188.98	0.0	0.00	0.00	0.00	
		-31.50 L	-24.23	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.34	5.22	1.34	5.22	HS 26.80	48.2
HS20	2.23	8.70	2.23	8.70	HS 44.67	80.4
2F1	3.24	12.94	3.24	12.94	0.00	48.6
3F1	2.55	9.02	2.55	9.02	0.00	58.7
4F1	2.39	8.38	2.39	8.38	0.00	64.6

5C1 2.55 9.58 2.55 9.58 0.00 102.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	28.67	28.67	1.699	999999.000	90.016

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.72		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	11.96	1.00	33000.	73.86	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 2.6
Superimposed Dead Load Moment 26.1

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	163.2	-178.4	144.0	-197.6
OPER	300.6C	-268.7	268.7	-300.6C	272.0	-297.3	240.0	-329.3

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	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38			
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00		
OPER	HS20	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38			
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00		
OPER	2F1	84.95 R	65.35	189.38	0.0	0.00	0.00	0.00			
		-19.44 L	-14.95	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.12 L	88.55	169.38	0.0	0.00	0.00	0.00			
		-27.89 L	-21.45	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	122.96 R	94.59	193.38	0.0	0.00	0.00	0.00			
		-30.01 L	-23.08	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.86 R	84.51	230.38	0.0	0.00	0.00	0.00			
		-26.25 L	-20.19	145.85	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	1.29	6.17	1.14	6.83	HS 22.78	41.0
HS20	2.15	10.28	1.90	11.39	HS 37.97	68.3
2F1	3.20	15.30	2.83	16.94	0.00	42.4
3F1	2.36	10.66	2.09	11.81	0.00	47.9
4F1	2.21	9.91	1.95	10.97	0.00	52.7
5C1	2.48	11.33	2.18	12.54	0.00	87.4

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
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0.2	0.0	1.6
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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	-10.57	17.10	-8.13	13.16	-9.87	15.53	-7.59	11.95
OPER	HS20	-10.57	17.10	-8.13	13.16	-9.87	15.53	-7.59	11.95
OPER	2F1	-6.97	10.79	-5.36	8.30	0.00	0.00	0.00	0.00
OPER	3F1	-8.59	14.22	-6.61	10.94	0.00	0.00	0.00	0.00
OPER	4F1	-7.79	14.12	-6.00	10.87	0.00	0.00	0.00	0.00
OPER	5C1	-9.17	14.74	-7.05	11.34	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.70	4.02	HS 80.41	144.7
HS20	11.18	6.70	HS 134.02	241.2
2F1	16.94	10.63	0.00	159.4
3F1	13.76	8.06	0.00	185.3
4F1	15.16	8.11	0.00	219.1
5C1	12.88	7.78	0.00	311.1

SERVICEABILITY 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 Moment 2.6
Superimposed Dead Load Moment 26.1

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. 184.8	179.1	-156.2	179.1	-156.2	150.4	-184.8	150.4	-
OPER 308.1	279.4	-279.4	279.4	-279.4	250.7	-308.1	250.7	-

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	126.40	97.23	R 207.38	0.0	101.45	78.03	179.38	
		-28.91	-22.24	L 134.63	0.0	-22.01	-16.93	157.85	0.00
OPER	HS20	126.40	97.23	R 207.38	0.0	101.45	78.03	179.38	
		-28.91	-22.24	L 134.63	0.0	-22.01	-16.93	157.85	0.00
OPER	2F1	84.95	65.35	R 189.38	0.0	0.00	0.00	0.00	
		-19.44	-14.95	L 150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.12	88.55	R 169.38	0.0	0.00	0.00	0.00	
		-27.89	-21.45	L 147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	122.96	94.59	R 193.38	0.0	0.00	0.00	0.00	
		-30.01	-23.08	L 144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.86	84.51	R 230.38	0.0	0.00	0.00	0.00	
		-26.25	-20.19	L 145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.19	6.39	1.19	6.39	HS 23.80	42.8
HS20	1.98	10.65	1.98	10.65	HS 39.67	71.4
2F1	2.95	15.85	2.95	15.85	0.00	44.3
3F1	2.18	11.05	2.18	11.05	0.00	50.1
4F1	2.04	10.27	2.04	10.27	0.00	55.1

5C1	2.28	11.73	2.28	11.73	0.00	91.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
 Moment Moment
 2.8 27.9

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	162.0	-179.6	142.8	-198.8
OPER	300.6C	-268.7	268.7	-300.6C	270.0	-299.3	238.0	-331.3

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	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77			
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00		
OPER	HS20	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77			
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00		
OPER	2F1	89.41 L	68.77	171.77	0.0	0.00	0.00	0.00			
		-15.55 L	-11.96	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	118.12 L	90.86	171.77	0.0	0.00	0.00	0.00			
		-22.31 L	-17.16	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.02 L	96.94	167.77	0.0	0.00	0.00	0.00			
		-24.01 L	-18.47	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	113.03 R	86.95	228.77	0.0	0.00	0.00	0.00			
		-21.00 L	-16.16	145.85	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	1.24	7.76	1.09	8.60	HS 21.78	39.2
HS20	2.06	12.94	1.82	14.32	HS 36.31	65.4
2F1	3.02	19.25	2.66	21.31	0.00	39.9
3F1	2.29	13.42	2.02	14.85	0.00	46.3
4F1	2.14	12.47	1.89	13.80	0.00	51.0
5C1	2.39	14.25	2.11	15.78	0.00	84.2

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
0.0	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	-13.70	13.19	-10.54	10.15	-12.82	12.46	-9.86	9.59
OPER	HS20	-13.70	13.19	-10.54	10.15	-12.82	12.46	-9.86	9.59
OPER	2F1	-9.35	8.10	-7.19	6.23	0.00	0.00	0.00	0.00
OPER	3F1	-11.89	10.98	-9.15	8.45	0.00	0.00	0.00	0.00
OPER	4F1	-11.77	10.00	-9.05	7.70	0.00	0.00	0.00	0.00
OPER	5C1	-11.82	11.94	-9.09	9.19	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.10	5.29	HS 101.94	183.5
HS20	8.49	8.82	HS 169.90	305.8
2F1	12.45	14.36	0.00	186.8
3F1	9.79	10.59	0.00	225.1
4F1	9.89	11.63	0.00	267.0
5C1	9.85	9.74	0.00	389.6

SERVICEABILITY 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 Moment 2.8
Superimposed Dead Load Moment 27.9

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. 186.1	179.9	-155.4	179.9	-155.4	149.2	-186.1	149.2	-
OPER 310.1	279.4	-279.4	279.4	-279.4	248.7	-310.1	248.7	-

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	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77	
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00
OPER	HS20	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77	
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00
OPER	2F1	89.41 L	68.77	171.77	0.0	0.00	0.00	0.00	
		-15.55 L	-11.96	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	118.12 L	90.86	171.77	0.0	0.00	0.00	0.00	
		-22.31 L	-17.16	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.02 L	96.94	167.77	0.0	0.00	0.00	0.00	
		-24.01 L	-18.47	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	113.03 R	86.95	228.77	0.0	0.00	0.00	0.00	
		-21.00 L	-16.16	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.14	8.04	1.14	8.04	HS 22.77	41.0
HS20	1.90	13.41	1.90	13.41	HS 37.95	68.3
2F1	2.78	19.94	2.78	19.94	0.00	41.7
3F1	2.11	13.90	2.11	13.90	0.00	48.4
4F1	1.97	12.92	1.97	12.92	0.00	53.3

5C1	2.20	14.77	2.20	14.77	0.00	88.0
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 2.6
Superimposed Dead Load Moment 26.2

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	163.1	-178.5	143.9	-197.7
OPER	300.6C	-268.7	268.7	-300.6C	271.8	-297.5	239.8	-329.5

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	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16			
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00		
OPER	HS20	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16			
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00		
OPER	2F1	85.62 L	65.86	174.16	0.0	0.00	0.00	0.00			
		-11.66 L	-8.97	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.73 L	85.95	170.16	0.0	0.00	0.00	0.00			
		-16.73 L	-12.87	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	115.66 L	88.97	170.16	0.0	0.00	0.00	0.00			
		-18.00 L	-13.85	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	108.35 L	83.35	168.16	0.0	0.00	0.00	0.00			
		-15.75 L	-12.12	145.85	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	1.24	10.29	1.10	11.40	HS 21.94	39.5
HS20	2.07	17.15	1.83	18.99	HS 36.56	65.8
2F1	3.17	25.51	2.80	28.25	0.00	42.0
3F1	2.43	17.78	2.15	19.69	0.00	49.4
4F1	2.35	16.52	2.07	18.30	0.00	56.0
5C1	2.51	18.89	2.21	20.92	0.00	88.5

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.	8.700		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	151.3	-114.8	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	-18.28	9.87	-14.06	7.59	-16.05	9.40	-12.35	7.23
OPER	HS20	-18.28	9.87	-14.06	7.59	-16.05	9.40	-12.35	7.23
OPER	2F1	-11.93	6.17	-9.18	4.75	0.00	0.00	0.00	0.00
OPER	3F1	-15.57	7.60	-11.98	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.37	6.26	-11.82	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.10	9.00	-11.62	6.92	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.77	7.17	HS 75.33	135.6
HS20	6.28	11.95	HS 125.55	226.0
2F1	9.62	19.12	0.00	144.3
3F1	7.37	15.52	0.00	169.5
4F1	7.47	18.85	0.00	201.7
5C1	7.60	13.10	0.00	304.0

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. 8.700 2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.2

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. 184.9	179.2	-156.1	179.2	-156.1	150.3	-184.9	150.3	-
OPER 308.2	279.4	-279.4	279.4	-279.4	250.6	-308.2	250.6	-

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	131.19	R	100.92	198.16	0.0	94.42	72.63	184.16		
		-17.35	L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00	
OPER	HS20	131.19	R	100.92	198.16	0.0	94.42	72.63	184.16		
		-17.35	L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00	
OPER	2F1	85.62	L	65.86	174.16	0.0	0.00	0.00	0.00		
		-11.66	L	-8.97	150.24	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	111.73	L	85.95	170.16	0.0	0.00	0.00	0.00		
		-16.73	L	-12.87	147.85	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	115.66	L	88.97	170.16	0.0	0.00	0.00	0.00		
		-18.00	L	-13.85	144.63	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	108.35	L	83.35	168.16	0.0	0.00	0.00	0.00		
		-15.75	L	-12.12	145.85	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	1.15	10.66	1.15	10.66	HS 22.92	41.3
HS20	1.91	17.77	1.91	17.77	HS 38.20	68.8
2F1	2.93	26.43	2.93	26.43	0.00	43.9
3F1	2.24	18.42	2.24	18.42	0.00	51.6
4F1	2.17	17.12	2.17	17.12	0.00	58.5

5C1	2.31	19.57	2.31	19.57	0.00	92.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 Superimposed Dead Load
Moment Moment
2.1 21.0

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	166.5	-175.0	147.3	-194.2
OPER	300.6C	-268.7	268.7	-300.6C	277.5	-291.7	245.6	-323.7

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	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55			
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00		
OPER	HS20	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55			
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00		
OPER	2F1	70.29 L	54.07	176.55	0.0	0.00	0.00	0.00			
		-7.78 L	-5.98	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.58 L	71.99	172.55	0.0	0.00	0.00	0.00			
		-11.15 L	-8.58	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.18 L	71.68	168.55	0.0	0.00	0.00	0.00			
		-12.00 L	-9.23	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.77 L	69.82	170.55	0.0	0.00	0.00	0.00			
		-10.50 L	-8.08	145.85	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	1.49	15.14	1.32	16.80	HS 26.36	47.4
HS20	2.48	25.23	2.20	27.99	HS 43.93	79.1
2F1	3.95	37.52	3.49	41.64	0.00	52.4
3F1	2.97	26.16	2.62	29.02	0.00	60.4
4F1	2.98	24.31	2.63	26.97	0.00	71.2
5C1	3.06	27.78	2.70	30.83	0.00	108.2

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
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-0.3	-2.9	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.9	71.7
OPER	151.3	-113.2	119.6

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	-23.37	6.65	-17.98	5.12	-19.54	6.39	-15.03	4.92
OPER	HS20	-23.37	6.65	-17.98	5.12	-19.54	6.39	-15.03	4.92
OPER	2F1	-14.70	4.16	-11.30	3.20	0.00	0.00	0.00	0.00
OPER	3F1	-19.56	4.12	-15.05	3.17	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.39	-14.99	2.61	0.00	0.00	0.00	0.00
OPER	5C1	-18.98	5.90	-14.60	4.54	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.90	10.78	HS 58.11	104.6
HS20	4.84	17.98	HS 96.84	174.3
2F1	7.70	28.76	0.00	115.5
3F1	5.78	29.05	0.00	133.0
4F1	5.81	35.27	0.00	156.8
5C1	5.96	20.27	0.00	238.5

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 2.1
Superimposed Dead Load Moment 21.0

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. 181.5	176.9	-158.4	176.9	-158.4	153.8	-181.5	153.8	-
OPER 302.5	279.4	-279.4	279.4	-279.4	256.3	-302.5	256.3	-

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	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55	
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00
OPER	HS20	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55	
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00
OPER	2F1	70.29 L	54.07	176.55	0.0	0.00	0.00	0.00	
		-7.78 L	-5.98	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.58 L	71.99	172.55	0.0	0.00	0.00	0.00	
		-11.15 L	-8.58	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.18 L	71.68	168.55	0.0	0.00	0.00	0.00	
		-12.00 L	-9.23	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.77 L	69.82	170.55	0.0	0.00	0.00	0.00	
		-10.50 L	-8.08	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.38	15.69	1.38	15.69	HS 27.51	49.5
HS20	2.29	26.16	2.29	26.16	HS 45.86	82.5
2F1	3.65	38.90	3.65	38.90	0.00	54.7
3F1	2.74	27.12	2.74	27.12	0.00	63.0
4F1	2.75	25.20	2.75	25.20	0.00	74.3

5C1	2.82	28.81	2.82	28.81	0.00	112.9
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 8.900 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

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	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	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94			
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00		
OPER	HS20	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94			
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00		
OPER	2F1	42.08 L	32.37	178.94	0.0	0.00	0.00	0.00			
		-3.89 L	-2.99	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.95 L	43.80	174.94	0.0	0.00	0.00	0.00			
		-5.58 L	-4.29	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	57.76 L	44.43	170.94	0.0	0.00	0.00	0.00			
		-6.00 L	-4.62	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	55.29 L	42.53	172.94	0.0	0.00	0.00	0.00			
		-5.25 L	-4.04	145.85	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	2.49	29.27	2.22	32.59	HS 44.34	79.8
HS20	4.16	48.79	3.69	54.32	HS 73.90	133.0
2F1	6.82	72.57	6.06	80.80	0.00	91.0
3F1	5.04	50.59	4.48	56.32	0.00	103.1
4F1	4.97	47.01	4.42	52.34	0.00	119.3
5C1	5.19	53.74	4.61	59.83	0.00	184.6

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.	8.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	
-0.4	-4.4	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.7
OPER	151.3	-111.5	121.2

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	-28.88	3.35	-22.21	2.58	-23.25	3.47	-17.88	2.67
OPER	HS20	-28.88	3.35	-22.21	2.58	-23.25	3.47	-17.88	2.67
OPER	2F1	-17.59	2.09	-13.53	1.61	0.00	0.00	0.00	0.00
OPER	3F1	-23.81	2.33	-18.32	1.79	0.00	0.00	0.00	0.00
OPER	4F1	-24.15	2.49	-18.58	1.92	0.00	0.00	0.00	0.00
OPER	5C1	-23.12	3.82	-17.78	2.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.32	20.97	HS 46.35	83.4
HS20	3.86	34.94	HS 77.26	139.1
2F1	6.34	57.93	0.00	95.1
3F1	4.68	51.97	0.00	107.7
4F1	4.62	48.62	0.00	124.7
5C1	4.82	31.74	0.00	193.0

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. 8.900 2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

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. 175.7	173.0	-162.2	173.0	-162.2	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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94	
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00
OPER	HS20	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94	
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00
OPER	2F1	42.08 L	32.37	178.94	0.0	0.00	0.00	0.00	
		-3.89 L	-2.99	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.95 L	43.80	174.94	0.0	0.00	0.00	0.00	
		-5.58 L	-4.29	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	57.76 L	44.43	170.94	0.0	0.00	0.00	0.00	
		-6.00 L	-4.62	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.29 L	42.53	172.94	0.0	0.00	0.00	0.00	
		-5.25 L	-4.04	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.31	30.39	2.31	30.39	HS 46.21	83.2
HS20	3.85	50.65	3.85	50.65	HS 77.01	138.6
2F1	6.32	75.34	6.32	75.34	0.00	94.8
3F1	4.67	52.51	4.67	52.51	0.00	107.4
4F1	4.60	48.80	4.60	48.80	0.00	124.3

5C1	4.81	55.78	4.81	55.78	0.00	192.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	70.2
OPER	151.3	-109.9	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	-34.71	0.00	-26.70	0.00	-27.16	2.36	-20.89	1.82
OPER	HS20	-34.71	0.00	-26.70	0.00	-27.16	2.36	-20.89	1.82
OPER	2F1	-20.59	0.00	-15.84	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.25	0.00	-21.73	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.10	0.00	-22.39	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.46	0.00	-21.13	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	29.72	HS 38.00	68.4
HS20	3.17	49.53	HS 63.33	114.0
2F1	5.34	999.00	0.00	80.1
3F1	3.89	999.00	0.00	89.5
4F1	3.78	999.00	0.00	102.0
5C1	4.00	999.00	0.00	160.1

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 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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 R	0.00	0.0	0.00	0.00	0.00	
		0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00 R	0.00	0.0	0.00	0.00	0.00	0.00
		0.00 R	0.00 R	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 8

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	
	23.917	23.917	23.917	23.917	23.917	
	Span 6	Span 7	Span 8	Span 9	Span 10	
	23.917	23.917	23.917	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	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	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	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	688.0	688.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	688.0	688.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	688.0	688.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	688.0	688.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	688.0	688.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	688.0	688.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	688.0	688.0	23.917	0.0
8	P	11.958	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.000

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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.	1.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.1	65.5
OPER	151.3	-123.5	109.2

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	-2.32	34.71	-1.78	26.70	-2.36	27.16	-1.82	20.89
OPER	HS20	-2.32	34.71	-1.78	26.70	-2.36	27.16	-1.82	20.89
OPER	2F1	-1.63	20.59	-1.25	15.84	0.00	0.00	0.00	0.00
OPER	3F1	-2.33	28.25	-1.79	21.73	0.00	0.00	0.00	0.00
OPER	4F1	-2.49	29.10	-1.92	22.39	0.00	0.00	0.00	0.00
OPER	5C1	-2.20	27.46	-1.69	21.13	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.38	1.89	HS 37.76	68.0
HS20	52.30	3.15	HS 62.93	113.3
2F1	75.98	5.31	0.00	79.6
3F1	52.96	3.87	0.00	88.9
4F1	49.54	3.75	0.00	101.3
5C1	56.26	3.98	0.00	159.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000
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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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. 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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.100

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.7

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	171.4	-170.1	152.2	-189.3
OPER	300.6C	-268.7	268.7	-300.6C	285.7	-283.6	253.7	-315.6

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	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39			
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00		
OPER	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39			
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00		
OPER	2F1	42.08 R	32.37	12.39	0.0	0.00	0.00	0.00			
		-3.89 R	-2.99	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.95 R	43.80	16.39	0.0	0.00	0.00	0.00			
		-5.58 R	-4.29	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	57.76 R	44.43	20.39	0.0	0.00	0.00	0.00			
		-6.00 R	-4.62	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	55.29 R	42.53	18.39	0.0	0.00	0.00	0.00			
		-5.25 R	-4.04	45.48	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	2.48	29.42	2.20	32.74	HS 44.09	79.4
HS20	4.14	49.04	3.67	54.57	HS 73.48	132.3
2F1	6.79	72.94	6.03	81.17	0.00	90.4
3F1	5.02	50.85	4.46	56.58	0.00	102.5
4F1	4.95	47.25	4.39	52.58	0.00	118.6
5C1	5.17	54.01	4.59	60.10	0.00	183.6

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.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.6
OPER	151.3	-121.7	111.0

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	-3.35	28.88	-2.58	22.21	-3.47	23.25	-2.67	17.88
OPER	HS20	-3.35	28.88	-2.58	22.21	-3.47	23.25	-2.67	17.88
OPER	2F1	-2.09	17.59	-1.61	13.53	0.00	0.00	0.00	0.00
OPER	3F1	-2.33	23.81	-1.79	18.32	0.00	0.00	0.00	0.00
OPER	4F1	-2.49	24.15	-1.92	18.58	0.00	0.00	0.00	0.00
OPER	5C1	-3.82	23.12	-2.94	17.78	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.06	2.31	HS 46.14	83.1
HS20	35.09	3.85	HS 76.90	138.4
2F1	58.17	6.31	0.00	94.7
3F1	52.19	4.66	0.00	107.2
4F1	48.82	4.60	0.00	124.1
5C1	31.87	4.80	0.00	192.1

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 1.2
Superimposed Dead Load Moment 13.7

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. 176.6	173.6	-161.7	173.6	-161.7	158.7	-176.6	158.7	-
OPER 294.3	279.4	-279.4	279.4	-279.4	264.5	-294.3	264.5	-

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	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39	
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00
OPER	HS20	69.06 L	53.12	-11.61	0.0	43.62	33.55	2.39	
		-5.78 R	-4.45	56.70	0.0	-4.40	-3.39	33.48	0.00
OPER	2F1	42.08 R	32.37	12.39	0.0	0.00	0.00	0.00	0.00
		-3.89 R	-2.99	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.95 R	43.80	16.39	0.0	0.00	0.00	0.00	0.00
		-5.58 R	-4.29	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	57.76 R	44.43	20.39	0.0	0.00	0.00	0.00	0.00
		-6.00 R	-4.62	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.29 R	42.53	18.39	0.0	0.00	0.00	0.00	0.00
		-5.25 R	-4.04	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.30	30.54	2.30	30.54	HS 45.96	82.7
HS20	3.83	50.90	3.83	50.90	HS 76.59	137.9
2F1	6.28	75.71	6.28	75.71	0.00	94.3
3F1	4.64	52.77	4.64	52.77	0.00	106.8
4F1	4.58	49.04	4.58	49.04	0.00	123.6

5C1	4.78	56.06	4.78	56.06	0.00	191.3
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.200

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

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	165.0	-176.5	145.9	-195.7
OPER	300.6C	-268.7	268.7	-300.6C	275.1	-294.2	243.1	-326.2

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	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78			
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00		
OPER	HS20	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78			
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48	0.00		
OPER	2F1	70.29 R	54.07	14.78	0.0	0.00	0.00	0.00			
		-7.78 R	-5.98	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.58 R	71.99	18.78	0.0	0.00	0.00	0.00			
		-11.15 R	-8.58	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.18 R	71.68	22.78	0.0	0.00	0.00	0.00			
		-12.00 R	-9.23	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.77 R	69.82	20.78	0.0	0.00	0.00	0.00			
		-10.50 R	-8.08	45.48	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	15.26	1.30	16.92	HS 26.10	47.0
HS20	2.46	25.44	2.17	28.21	HS 43.49	78.3
2F1	3.91	37.84	3.46	41.95	0.00	51.9
3F1	2.94	26.38	2.60	29.24	0.00	59.7
4F1	2.95	24.51	2.61	27.18	0.00	70.4
5C1	3.03	28.02	2.68	31.06	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.

1.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.3

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	-6.65	23.37	-5.12	17.98	-6.39	19.54	-4.92	15.03
OPER	HS20	-6.65	23.37	-5.12	17.98	-6.39	19.54	-4.92	15.03
OPER	2F1	-4.16	14.70	-3.20	11.30	0.00	0.00	0.00	0.00
OPER	3F1	-4.12	19.56	-3.17	15.05	0.00	0.00	0.00	0.00
OPER	4F1	-3.39	19.48	-2.61	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-5.90	18.98	-4.54	14.60	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.81	2.90	HS 57.93	104.3
HS20	18.03	4.83	HS 96.55	173.8
2F1	28.84	7.68	0.00	115.2
3F1	29.13	5.77	0.00	132.6
4F1	35.37	5.79	0.00	156.4
5C1	20.33	5.95	0.00	237.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

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. 183.0	177.9	-157.4	177.9	-157.4	152.3	-183.0	152.3	-
OPER 305.0	279.4	-279.4	279.4	-279.4	253.8	-305.0	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 Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48
OPER	HS20	111.79 L	85.99	-9.22	0.0	74.30	57.16	4.78
		-11.56 R	-8.90	56.70	0.0	-8.81	-6.77	33.48
OPER	2F1	70.29 R	54.07	14.78	0.0	0.00	0.00	0.00
		-7.78 R	-5.98	41.09	0.0	0.00	0.00	0.00
OPER	3F1	93.58 R	71.99	18.78	0.0	0.00	0.00	0.00
		-11.15 R	-8.58	43.48	0.0	0.00	0.00	0.00
OPER	4F1	93.18 R	71.68	22.78	0.0	0.00	0.00	0.00
		-12.00 R	-9.23	46.70	0.0	0.00	0.00	0.00
OPER	5C1	90.77 R	69.82	20.78	0.0	0.00	0.00	0.00
		-10.50 R	-8.08	45.48	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	15.82	1.36	15.82	HS 27.25	49.0
HS20	2.27	26.37	2.27	26.37	HS 45.41	81.7
2F1	3.61	39.22	3.61	39.22	0.00	54.2
3F1	2.71	27.34	2.71	27.34	0.00	62.4
4F1	2.72	25.41	2.72	25.41	0.00	73.6

5C1	2.80	29.04	2.80	29.04	0.00	111.9
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.300

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.3

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	161.2	-180.3	142.1	-199.5
OPER	300.6C	-268.7	268.7	-300.6C	268.7	-300.6	236.8	-332.5

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	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18			
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00		
OPER	HS20	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18			
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00		
OPER	2F1	85.62 R	65.86	17.18	0.0	0.00	0.00	0.00			
		-11.66 R	-8.97	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.73 R	85.95	21.18	0.0	0.00	0.00	0.00			
		-16.73 R	-12.87	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	115.66 R	88.97	21.18	0.0	0.00	0.00	0.00			
		-18.00 R	-13.85	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	108.35 R	83.35	23.18	0.0	0.00	0.00	0.00			
		-15.75 R	-12.12	45.48	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	1.23	10.40	1.08	11.50	HS 21.66	39.0
HS20	2.05	17.33	1.80	19.17	HS 36.09	65.0
2F1	3.14	25.77	2.77	28.51	0.00	41.5
3F1	2.40	17.96	2.12	19.88	0.00	48.7
4F1	2.32	16.69	2.05	18.47	0.00	55.3
5C1	2.48	19.08	2.18	21.11	0.00	87.4

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.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.1	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	-9.87	18.28	-7.59	14.06	-9.40	16.05	-7.23	12.35
OPER	HS20	-9.87	18.28	-7.59	14.06	-9.40	16.05	-7.23	12.35
OPER	2F1	-6.17	11.93	-4.75	9.18	0.00	0.00	0.00	0.00
OPER	3F1	-7.60	15.57	-5.84	11.98	0.00	0.00	0.00	0.00
OPER	4F1	-6.26	15.37	-4.81	11.82	0.00	0.00	0.00	0.00
OPER	5C1	-9.00	15.10	-6.92	11.62	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.18	3.76	HS 75.22	135.4
HS20	11.97	6.27	HS 125.37	225.7
2F1	19.14	9.60	0.00	144.1
3F1	15.55	7.36	0.00	169.3
4F1	18.88	7.46	0.00	201.4
5C1	13.12	7.59	0.00	303.6

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 2.6
Superimposed Dead Load Moment 29.3

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. 186.8	180.4	-154.9	180.4	-154.9	148.5	-186.8	148.5	-
OPER 311.3	279.4	-279.4	279.4	-279.4	247.5	-311.3	247.5	-

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	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18	
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00
OPER	HS20	131.19 L	100.92	-6.82	0.0	94.42	72.63	7.18	
		-17.35 R	-13.34	56.70	0.0	-13.21	-10.16	33.48	0.00
OPER	2F1	85.62 R	65.86	17.18	0.0	0.00	0.00	0.00	
		-11.66 R	-8.97	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.73 R	85.95	21.18	0.0	0.00	0.00	0.00	
		-16.73 R	-12.87	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	115.66 R	88.97	21.18	0.0	0.00	0.00	0.00	
		-18.00 R	-13.85	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	108.35 R	83.35	23.18	0.0	0.00	0.00	0.00	
		-15.75 R	-12.12	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.13	10.77	1.13	10.77	HS 22.64	40.8
HS20	1.89	17.94	1.89	17.94	HS 37.73	67.9
2F1	2.89	26.69	2.89	26.69	0.00	43.4
3F1	2.21	18.60	2.21	18.60	0.00	50.9
4F1	2.14	17.29	2.14	17.29	0.00	57.8

5C1	2.28	19.76	2.28	19.76	0.00	91.4
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.400

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 31.2

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	160.0	-181.6	140.8	-200.8
OPER	300.6C	-268.7	268.7	-300.6C	266.7	-302.6	234.7	-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	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57			
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00		
OPER	HS20	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57			
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00		
OPER	2F1	89.41 R	68.77	19.57	0.0	0.00	0.00	0.00			
		-15.55 R	-11.96	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	118.12 R	90.86	19.57	0.0	0.00	0.00	0.00			
		-22.31 R	-17.16	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.02 R	96.94	23.57	0.0	0.00	0.00	0.00			
		-24.01 R	-18.47	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	113.03 L	86.95	-37.43	0.0	0.00	0.00	0.00			
		-21.00 R	-16.16	45.48	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	1.22	7.85	1.07	8.68	HS 21.49	38.7
HS20	2.03	13.08	1.79	14.47	HS 35.81	64.5
2F1	2.98	19.46	2.62	21.52	0.00	39.4
3F1	2.26	13.56	1.99	15.00	0.00	45.7
4F1	2.12	12.61	1.86	13.94	0.00	50.3
5C1	2.36	14.41	2.08	15.93	0.00	83.1

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.	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.	90.8	-69.8	69.8
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	-13.19	13.70	-10.15	10.54	-12.46	12.82	-9.59	9.86
OPER	HS20	-13.19	13.70	-10.15	10.54	-12.46	12.82	-9.59	9.86
OPER	2F1	-8.10	9.35	-6.23	7.19	0.00	0.00	0.00	0.00
OPER	3F1	-10.98	11.89	-8.45	9.15	0.00	0.00	0.00	0.00
OPER	4F1	-10.00	11.77	-7.70	9.05	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	11.82	-9.40	9.09	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.29	5.10	HS 101.95	183.5
HS20	8.82	8.50	HS 169.91	305.8
2F1	14.36	12.46	0.00	186.8
3F1	10.59	9.79	0.00	225.1
4F1	11.63	9.89	0.00	267.0
5C1	9.52	9.85	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. 1.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 31.2

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. 188.0	181.2	-154.1	181.2	-154.1	147.3	-188.0	147.3	-
OPER 313.3	279.4	-279.4	279.4	-279.4	245.5	-313.3	245.5	-

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	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57	
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00
OPER	HS20	131.09 L	100.84	-4.43	0.0	102.53	78.87	9.57	
		-23.13 R	-17.79	56.70	0.0	-17.61	-13.55	33.48	0.00
OPER	2F1	89.41 R	68.77	19.57	0.0	0.00	0.00	0.00	
		-15.55 R	-11.96	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	118.12 R	90.86	19.57	0.0	0.00	0.00	0.00	
		-22.31 R	-17.16	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.02 R	96.94	23.57	0.0	0.00	0.00	0.00	
		-24.01 R	-18.47	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	113.03 L	86.95	-37.43	0.0	0.00	0.00	0.00	
		-21.00 R	-16.16	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.12	8.13	1.12	8.13	HS 22.47	40.4
HS20	1.87	13.55	1.87	13.55	HS 37.45	67.4
2F1	2.74	20.15	2.74	20.15	0.00	41.2
3F1	2.08	14.05	2.08	14.05	0.00	47.8
4F1	1.95	13.05	1.95	13.05	0.00	52.6

5C1	2.17	14.92	2.17	14.92	0.00	86.9
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.500

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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. 1.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.1

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	161.4	-180.2	142.2	-199.4
OPER	300.6C	-268.7	268.7	-300.6C	268.9	-300.4	236.9	-332.3

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	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96			
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00		
OPER	HS20	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96			
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00		
OPER	2F1	84.95 L	65.35	1.96	0.0	0.00	0.00	0.00			
		-19.44 R	-14.95	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.12 R	88.55	21.96	0.0	0.00	0.00	0.00			
		-27.89 R	-21.45	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	122.96 L	94.59	-2.04	0.0	0.00	0.00	0.00			
		-30.01 R	-23.08	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.86 L	84.51	-39.04	0.0	0.00	0.00	0.00			
		-26.25 R	-20.19	45.48	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	1.28	6.23	1.12	6.90	HS 22.49	40.5
HS20	2.13	10.39	1.88	11.49	HS 37.49	67.5
2F1	3.17	15.45	2.79	17.10	0.00	41.8
3F1	2.34	10.77	2.06	11.92	0.00	47.3
4F1	2.19	10.01	1.93	11.08	0.00	52.0
5C1	2.45	11.44	2.16	12.66	0.00	86.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

1.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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-0.2	-1.7	0.1
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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	-17.10	10.57	-13.16	8.13	-15.53	9.87	-11.95	7.59
OPER	HS20	-17.10	10.57	-13.16	8.13	-15.53	9.87	-11.95	7.59
OPER	2F1	-10.79	6.97	-8.30	5.36	0.00	0.00	0.00	0.00
OPER	3F1	-14.22	8.59	-10.94	6.61	0.00	0.00	0.00	0.00
OPER	4F1	-14.12	7.79	-10.87	6.00	0.00	0.00	0.00	0.00
OPER	5C1	-14.74	9.17	-11.34	7.05	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.02	6.71	HS 80.37	144.7
HS20	6.70	11.18	HS 133.95	241.1
2F1	10.62	16.95	0.00	159.3
3F1	8.06	13.76	0.00	185.3
4F1	8.11	15.16	0.00	219.0
5C1	7.77	12.89	0.00	310.9

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 2.6
Superimposed Dead Load Moment 29.1

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. 186.7	180.3	-155.0	180.3	-155.0	148.6	-186.7	148.6	-
OPER 311.1	279.4	-279.4	279.4	-279.4	247.7	-311.1	247.7	-

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	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96	
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00
OPER	HS20	126.40 L	97.23	-16.04	0.0	101.45	78.03	11.96	
		-28.91 R	-22.24	56.70	0.0	-22.01	-16.93	33.48	0.00
OPER	2F1	84.95 L	65.35	1.96	0.0	0.00	0.00	0.00	
		-19.44 R	-14.95	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.12 R	88.55	21.96	0.0	0.00	0.00	0.00	
		-27.89 R	-21.45	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	122.96 L	94.59	-2.04	0.0	0.00	0.00	0.00	
		-30.01 R	-23.08	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.86 L	84.51	-39.04	0.0	0.00	0.00	0.00	
		-26.25 R	-20.19	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.18	6.46	1.18	6.46	HS 23.51	42.3
HS20	1.96	10.76	1.96	10.76	HS 39.19	70.5
2F1	2.92	16.00	2.92	16.00	0.00	43.7
3F1	2.15	11.16	2.15	11.16	0.00	49.5
4F1	2.01	10.37	2.01	10.37	0.00	54.4

5C1	2.26	11.85	2.26	11.85	0.00	90.2
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.600

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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. 1.600 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.	180.4C	-161.2	161.2	-180.4C	165.5	-176.1	146.3	-195.3
OPER	300.6C	-268.7	268.7	-300.6C	275.8	-293.5	243.8	-325.5

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	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35			
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00		
OPER	HS20	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35			
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00		
OPER	2F1	79.32 L	61.01	4.35	0.0	0.00	0.00	0.00			
		-23.33 R	-17.94	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.67 L	77.44	4.35	0.0	0.00	0.00	0.00			
		-33.46 R	-25.74	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.42 L	82.63	0.35	0.0	0.00	0.00	0.00			
		-36.01 R	-27.70	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	100.66 L	77.43	2.35	0.0	0.00	0.00	0.00			
		-31.50 R	-24.23	45.48	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	5.08	1.27	5.63	HS 25.43	45.8
HS20	2.40	8.46	2.12	9.38	HS 42.39	76.3
2F1	3.48	12.58	3.07	13.95	0.00	46.1
3F1	2.74	8.77	2.42	9.73	0.00	55.7
4F1	2.57	8.15	2.27	9.04	0.00	61.3
5C1	2.74	9.32	2.42	10.33	0.00	96.9

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.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load 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	120.1

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	-20.41	7.37	-15.70	5.67	-18.56	7.23	-14.27	5.56
OPER	HS20	-20.41	7.37	-15.70	5.67	-18.56	7.23	-14.27	5.56
OPER	2F1	-13.51	4.85	-10.40	3.73	0.00	0.00	0.00	0.00
OPER	3F1	-17.46	5.68	-13.43	4.37	0.00	0.00	0.00	0.00
OPER	4F1	-18.13	4.81	-13.95	3.70	0.00	0.00	0.00	0.00
OPER	5C1	-17.66	6.74	-13.59	5.18	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.31	9.78	HS 66.20	119.2
HS20	5.52	16.30	HS 110.33	198.6
2F1	8.33	24.74	0.00	125.0
3F1	6.45	21.13	0.00	148.3
4F1	6.21	24.97	0.00	167.7
5C1	6.38	17.84	0.00	255.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600
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	-
INV. 182.6	177.6	-157.7	177.6	-157.7	152.7	-182.6	152.7	-
OPER 304.3	279.4	-279.4	279.4	-279.4	254.5	-304.3	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	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35	
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00
OPER	HS20	115.03 L	88.49	-13.65	0.0	90.18	69.37	14.35	
		-34.69 R	-26.69	56.70	0.0	-26.42	-20.32	33.48	0.00
OPER	2F1	79.32 L	61.01	4.35	0.0	0.00	0.00	0.00	
		-23.33 R	-17.94	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.67 L	77.44	4.35	0.0	0.00	0.00	0.00	
		-33.46 R	-25.74	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.42 L	82.63	0.35	0.0	0.00	0.00	0.00	
		-36.01 R	-27.70	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	100.66 L	77.43	2.35	0.0	0.00	0.00	0.00	
		-31.50 R	-24.23	45.48	0.0	0.00	0.00	0.00	0.00

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	5.26	1.33	5.26	HS 26.55	47.8
HS20	2.21	8.77	2.21	8.77	HS 44.26	79.7
2F1	3.21	13.04	3.21	13.04	0.00	48.1
3F1	2.53	9.09	2.53	9.09	0.00	58.2
4F1	2.37	8.45	2.37	8.45	0.00	64.0

5C1 2.53 9.66 2.53 9.66 0.00 101.1

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.700

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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. 1.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.6

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	172.1	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	286.9	-282.4	254.9	-314.4

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	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74			
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32		
OPER	HS20	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74			
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32		
OPER	2F1	63.71 L	49.01	6.74	0.0	0.00	0.00	0.00			
		-27.21 R	-20.93	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.13 L	62.41	2.74	0.0	0.00	0.00	0.00			
		-39.04 R	-30.03	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.23 L	63.25	2.74	0.0	0.00	0.00	0.00			
		-42.01 R	-32.32	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.63 R	64.33	63.74	0.0	0.00	0.00	0.00			
		-36.75 R	-28.27	45.48	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	4.19	1.55	4.66	HS 30.93	55.7
HS20	2.90	6.98	2.58	7.77	HS 51.55	92.8
2F1	4.50	10.38	4.00	11.55	0.00	60.0
3F1	3.54	7.23	3.14	8.05	0.00	72.3
4F1	3.49	6.72	3.10	7.48	0.00	83.7
5C1	3.43	7.68	3.05	8.55	0.00	121.9

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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-25.37	3.32	-19.52	2.55	-21.50	4.92	-16.54	3.79
OPER	HS20	-25.37	3.32	-19.52	2.55	-21.50	4.92	-16.54	3.79
OPER	2F1	-16.06	3.02	-12.35	2.32	0.00	0.00	0.00	0.00
OPER	3F1	-21.53	3.21	-16.56	2.47	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.34	-17.06	1.80	0.00	0.00	0.00	0.00
OPER	5C1	-20.73	4.51	-15.94	3.47	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.62	14.86	HS 52.41	94.3
HS20	4.37	24.77	HS 87.35	157.2
2F1	6.90	40.35	0.00	103.5
3F1	5.15	37.94	0.00	118.4
4F1	5.00	52.02	0.00	134.9
5C1	5.35	27.02	0.00	213.9

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 1.1
Superimposed Dead Load Moment 12.6

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. 175.9	173.1	-162.1	173.1	-162.1	159.4	-175.9	159.4	-
OPER 293.1	279.4	-279.4	279.4	-279.4	265.7	-293.1	265.7	-

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	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74	
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32
OPER	HS20	98.91 L	76.08	-11.26	0.0	72.00	55.39	16.74	
		-40.48 R	-31.14	56.70	0.0	-32.23	-24.79	33.48	81.32
OPER	2F1	63.71 L	49.01	6.74	0.0	0.00	0.00	0.00	
		-27.21 R	-20.93	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.13 L	62.41	2.74	0.0	0.00	0.00	0.00	
		-39.04 R	-30.03	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.23 L	63.25	2.74	0.0	0.00	0.00	0.00	
		-42.01 R	-32.32	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.63 R	64.33	63.74	0.0	0.00	0.00	0.00	
		-36.75 R	-28.27	45.48	0.0	0.00	0.00	0.00	0.00

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	4.34	1.61	4.34	HS 32.23	58.0
HS20	2.69	7.24	2.69	7.24	HS 53.72	96.7
2F1	4.17	10.77	4.17	10.77	0.00	62.5
3F1	3.28	7.51	3.28	7.51	0.00	75.3
4F1	3.23	6.98	3.23	6.98	0.00	87.2

5C1	3.18	7.98	3.18	7.98	0.00	127.1
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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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.800

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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.	1.800		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	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	270.4	-298.9

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	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13			
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32		
OPER	HS20	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13			
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32		
OPER	2F1	40.21 L	30.93	9.13	0.0	0.00	0.00	0.00	0.00		
		-31.10 R	-23.92	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	48.36 L	37.20	5.13	0.0	0.00	0.00	0.00	0.00		
		-44.62 R	-34.32	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.16 L	33.97	1.13	0.0	0.00	0.00	0.00	0.00		
		-48.01 R	-36.93	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.23 R	44.79	66.13	0.0	0.00	0.00	0.00	0.00		
		-42.00 R	-32.31	45.48	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	2.94	3.46	2.63	3.88	HS 52.59	94.7
HS20	4.90	5.77	4.38	6.46	HS 87.65	157.8
2F1	7.52	8.58	6.72	9.61	0.00	100.9
3F1	6.25	5.98	5.59	6.70	0.00	128.6
4F1	6.85	5.56	6.12	6.23	0.00	150.1
5C1	5.19	6.36	4.64	7.12	0.00	185.7

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
-0.6	-6.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.0	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	-30.85	1.15	-23.73	0.88	-24.31	2.96	-18.70	2.28
OPER	HS20	-30.85	1.15	-23.73	0.88	-24.31	2.96	-18.70	2.28
OPER	2F1	-18.38	1.49	-14.14	1.14	0.00	0.00	0.00	0.00
OPER	3F1	-25.31	1.20	-19.47	0.92	0.00	0.00	0.00	0.00
OPER	4F1	-25.80	0.67	-19.85	0.51	0.00	0.00	0.00	0.00
OPER	5C1	-23.87	2.56	-18.36	1.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.12	25.06	HS 42.41	76.3
HS20	3.53	41.76	HS 70.68	127.2
2F1	5.93	83.14	0.00	89.0
3F1	4.31	103.25	0.00	99.1
4F1	4.22	185.21	0.00	114.1
5C1	4.57	48.31	0.00	182.7

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 -0.2
Superimposed Dead Load Moment -1.5

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. 166.6	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
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	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13	
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32
OPER	HS20	61.69 L	47.46	-8.87	0.0	47.01	36.16	19.13	
		-46.26 R	-35.58	56.70	0.0	-36.90	-28.39	33.48	81.32
OPER	2F1	40.21 L	30.93	9.13	0.0	0.00	0.00	0.00	
		-31.10 R	-23.92	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	48.36 L	37.20	5.13	0.0	0.00	0.00	0.00	
		-44.62 R	-34.32	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.16 L	33.97	1.13	0.0	0.00	0.00	0.00	
		-48.01 R	-36.93	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.23 R	44.79	66.13	0.0	0.00	0.00	0.00	
		-42.00 R	-32.31	45.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.60	2.73	3.60	HS 54.68	98.4
HS20	4.56	6.00	4.56	6.00	HS 91.13	164.0
2F1	6.99	8.93	6.99	8.93	0.00	104.9
3F1	5.81	6.22	5.81	6.22	0.00	133.7
4F1	6.37	5.78	6.37	5.78	0.00	156.2

5C1 4.83 6.61 4.83 6.61 0.00 193.1

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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. 1.900

	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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. 1.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.8
Superimposed Dead Load Moment -19.6

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	193.2	-148.3	174.0	-167.5
OPER	300.6C	-268.7	268.7	-300.6C	322.1	-247.2	290.1	-279.2

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	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53			
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57		
OPER	HS20	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53			
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57		
OPER	2F1	11.27 L	8.67	11.53	0.0	0.00	0.00	0.00			
		-34.99 R	-26.91	41.09	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 R	10.35	67.40	0.0	0.00	0.00	0.00			
		-50.20 R	-38.61	43.48	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.30 R	11.00	71.40	0.0	0.00	0.00	0.00			
		-54.01 R	-41.55	46.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	26.43 R	20.33	68.53	0.0	0.00	0.00	0.00			
		-48.78 L	-37.53	-11.12	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	8.43	2.45	7.60	2.77	HS 49.09	88.4
HS20	14.06	4.09	12.66	4.62	HS 81.81	147.3
2F1	28.58	7.07	25.74	7.98	0.00	106.0
3F1	23.94	4.93	21.57	5.56	0.00	113.3
4F1	22.52	4.58	20.29	5.17	0.00	123.6
5C1	12.19	5.07	10.98	5.72	0.00	202.7

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
-0.8	-8.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-64.3	75.3
OPER	151.3	-107.2	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	-35.84	0.62	-27.57	0.48	-26.94	1.38	-20.72	1.06
OPER	HS20	-35.84	0.62	-27.57	0.48	-26.94	1.38	-20.72	1.06
OPER	2F1	-20.44	0.44	-15.72	0.34	0.00	0.00	0.00	0.00
OPER	3F1	-28.72	0.62	-22.10	0.48	0.00	0.00	0.00	0.00
OPER	4F1	-30.04	0.67	-23.11	0.51	0.00	0.00	0.00	0.00
OPER	5C1	-27.19	0.94	-20.92	0.73	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.79	54.66	HS 35.90	64.6
HS20	2.99	91.11	HS 59.84	107.7
2F1	5.25	288.18	0.00	78.7
3F1	3.73	200.87	0.00	85.9
4F1	3.57	187.89	0.00	96.4
5C1	3.94	132.98	0.00	157.7

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 -1.8
Superimposed Dead Load Moment -19.6

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. 154.8	159.1	-176.2	159.1	-176.2	180.5	-154.8	180.5	-
OPER 258.0	279.4	-279.4	279.4	-279.4	300.8	-258.0	300.8	-

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	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53	
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57
OPER	HS20	11.67 R	8.97	85.40	0.0	22.91	17.62	21.53	
		-59.93 R	-46.10	42.70	0.0	-60.44	-46.49	33.48	9.57
OPER	2F1	11.27 L	8.67	11.53	0.0	0.00	0.00	0.00	
		-34.99 R	-26.91	41.09	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.35	67.40	0.0	0.00	0.00	0.00	
		-50.20 R	-38.61	43.48	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.30 R	11.00	71.40	0.0	0.00	0.00	0.00	
		-54.01 R	-41.55	46.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.43 R	20.33	68.53	0.0	0.00	0.00	0.00	
		-48.78 L	-37.53	-11.12	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.88	2.56	7.88	2.56	HS 51.22	92.2
HS20	13.13	4.27	13.13	4.27	HS 85.37	153.7
2F1	26.70	7.37	26.70	7.37	0.00	110.6
3F1	22.37	5.14	22.37	5.14	0.00	118.2
4F1	21.04	4.78	21.04	4.78	0.00	129.0

5C1 11.38 5.29 11.38 5.29 0.00 211.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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
-3.8	-41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35		33.48	
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35		33.48	
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00		0.00	
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00		0.00	
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00		0.00	
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00		0.00	
		-81.29 R	-62.53	28.74	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	13.40	1.19	12.16	1.36	HS 23.85	42.9
HS20	22.34	1.99	20.27	2.27	HS 39.76	71.6
2F1	33.22	4.33	30.15	4.95	0.00	65.0
3F1	23.16	2.91	21.02	3.33	0.00	66.9
4F1	21.52	2.43	19.53	2.78	0.00	65.6
5C1	26.59	2.75	24.13	3.14	0.00	109.8

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	-0.9	-8.4	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.3	64.1
OPER	151.3	-105.4	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	-35.84	37.28	-27.57	28.68	-26.94	29.08	-20.72	22.37
OPER	HS20	-35.84	37.28	-27.57	28.68	-26.94	29.08	-20.72	22.37
OPER	2F1	-20.44	21.18	-15.72	16.29	0.00	0.00	0.00	0.00
OPER	3F1	-28.72	29.85	-22.10	22.96	0.00	0.00	0.00	0.00
OPER	4F1	-30.04	31.38	-23.11	24.14	0.00	0.00	0.00	0.00
OPER	5C1	-27.19	28.92	-20.92	22.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.57	1.72	HS 31.42	56.5
HS20	2.62	2.87	HS 52.36	94.2
2F1	4.75	5.04	0.00	71.3
3F1	3.32	3.58	0.00	76.4
4F1	3.11	3.40	0.00	84.0
5C1	3.49	3.69	0.00	139.7

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 -3.8
Superimposed Dead Load Moment -41.7

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. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00	
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00	
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00	
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00	
		-81.29 R	-62.53	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.58	1.25	12.58	1.25	HS 25.00	45.0
HS20	20.97	2.08	20.97	2.08	HS 41.67	75.0
2F1	31.18	4.54	31.18	4.54	0.00	68.1
3F1	21.74	3.05	21.74	3.05	0.00	70.1
4F1	20.20	2.55	20.20	2.55	0.00	68.8

5C1	24.95	2.88	24.95	2.88	0.00	115.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 2.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.8
Superimposed Dead Load Moment -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40			
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48		
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00			
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00			
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00			
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00			
		-81.29 R	-62.53	28.74	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	13.40	1.19	12.16	1.36	HS 23.85	42.9
HS20	22.34	1.99	20.27	2.27	HS 39.76	71.6
2F1	33.22	4.33	30.15	4.95	0.00	65.0
3F1	23.16	2.91	21.02	3.33	0.00	66.9
4F1	21.52	2.43	19.53	2.78	0.00	65.6
5C1	26.59	2.75	24.13	3.14	0.00	109.8

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.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	0.8	-10.0	8.8

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-63.3	64.1
OPER	151.3	-105.4	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	-40.27	37.28	-30.98	28.68	-29.34	29.08	-22.57	22.37
OPER	HS20	-40.27	37.28	-30.98	28.68	-29.34	29.08	-22.57	22.37
OPER	2F1	-22.19	21.18	-17.07	16.29	0.00	0.00	0.00	0.00
OPER	3F1	-31.72	29.85	-24.40	22.96	0.00	0.00	0.00	0.00
OPER	4F1	-33.90	31.38	-26.07	24.14	0.00	0.00	0.00	0.00
OPER	5C1	-30.19	28.92	-23.23	22.25	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.57	1.72	HS 31.42	56.5
HS20	2.62	2.87	HS 52.36	94.2
2F1	4.75	5.04	0.00	71.3
3F1	3.32	3.58	0.00	76.4
4F1	3.11	3.40	0.00	84.0
5C1	3.49	3.69	0.00	139.7

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 -3.8
Superimposed Dead Load Moment -41.7

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. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

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	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	HS20	15.49 R	11.92	80.62	0.0	11.80	9.07	57.40	
		-112.30 L	-86.38	3.09	0.0	-100.93	-77.64	14.35	33.48
OPER	2F1	10.42 R	8.01	65.01	0.0	0.00	0.00	0.00	
		-51.52 L	-39.63	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 R	11.50	67.40	0.0	0.00	0.00	0.00	
		-76.75 R	-59.04	28.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 R	12.37	70.62	0.0	0.00	0.00	0.00	
		-91.82 R	-70.63	28.70	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 R	10.01	106.79	0.0	0.00	0.00	0.00	
		-81.29 R	-62.53	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.58	1.25	12.58	1.25	HS 25.00	45.0
HS20	20.97	2.08	20.97	2.08	HS 41.67	75.0
2F1	31.18	4.54	31.18	4.54	0.00	68.1
3F1	21.74	3.05	21.74	3.05	0.00	70.1
4F1	20.20	2.55	20.20	2.55	0.00	68.8

5C1	24.95	2.88	24.95	2.88	0.00	115.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.1	-22.7

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	195.2	-146.3	176.0	-165.5
OPER	300.6C	-268.7	268.7	-300.6C	325.4	-243.9	293.4	-275.9

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	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31			
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27		
OPER	HS20	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31			
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27		
OPER	2F1	16.36 R	12.58	36.31	0.0	0.00	0.00	0.00			
		-44.99 L	-34.61	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.18 R	10.91	40.31	0.0	0.00	0.00	0.00			
		-64.36 L	-49.51	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	7.94 R	6.11	71.40	0.0	0.00	0.00	0.00			
		-68.98 L	-53.06	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.63 R	18.18	77.31	0.0	0.00	0.00	0.00			
		-59.16 L	-45.50	-2.43	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	8.20	1.94	7.39	2.20	HS 38.87	70.0
HS20	13.67	3.24	12.32	3.66	HS 64.78	116.6
2F1	19.89	5.42	17.94	6.13	0.00	81.3
3F1	22.95	3.79	20.70	4.29	0.00	87.2
4F1	40.96	3.54	36.93	4.00	0.00	95.5
5C1	13.77	4.12	12.41	4.66	0.00	164.9

SHEAR 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 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	-74.5	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	-3.11	32.69	-2.39	25.14	-3.21	26.19	-2.47	20.15
OPER	HS20	-3.11	32.69	-2.39	25.14	-3.21	26.19	-2.47	20.15
OPER	2F1	-2.18	19.16	-1.68	14.73	0.00	0.00	0.00	0.00
OPER	3F1	-3.12	26.41	-2.40	20.31	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	27.26	-2.57	20.97	0.00	0.00	0.00	0.00
OPER	5C1	-3.18	25.54	-2.45	19.65	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.18	1.99	HS 39.88	71.8
HS20	38.63	3.32	HS 66.46	119.6
2F1	57.00	5.67	0.00	85.1
3F1	39.73	4.11	0.00	94.6
4F1	37.16	3.98	0.00	107.6
5C1	38.99	4.25	0.00	170.1

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 -2.1
Superimposed Dead Load Moment -22.7

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. 152.8	157.7	-177.5	157.7	-177.5	182.5	-152.8	182.5	-
OPER 254.7	279.4	-279.4	279.4	-279.4	304.1	-254.7	304.1	-

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	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31	
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27
OPER	HS20	21.74 R	16.72	54.31	0.0	23.81	18.31	26.31	
		-75.31 R	-57.93	33.13	0.0	-62.54	-48.11	14.35	38.27
OPER	2F1	16.36 R	12.58	36.31	0.0	0.00	0.00	0.00	
		-44.99 L	-34.61	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.18 R	10.91	40.31	0.0	0.00	0.00	0.00	
		-64.36 L	-49.51	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	7.94 R	6.11	71.40	0.0	0.00	0.00	0.00	
		-68.98 L	-53.06	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.63 R	18.18	77.31	0.0	0.00	0.00	0.00	
		-59.16 L	-45.50	-2.43	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.67	2.03	7.67	2.03	HS 40.58	73.0
HS20	12.78	3.38	12.78	3.38	HS 67.63	121.7
2F1	18.60	5.66	18.60	5.66	0.00	84.9
3F1	21.45	3.96	21.45	3.96	0.00	91.0
4F1	38.29	3.69	38.29	3.69	0.00	99.7

5C1	12.87	4.30	12.87	4.30	0.00	172.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 -0.7
Superimposed Dead Load Moment -7.6

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	185.4	-156.2	166.2	-175.4
OPER	300.6C	-268.7	268.7	-300.6C	309.0	-260.3	277.0	-292.3

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	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70			
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27		
OPER	HS20	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70			
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27		
OPER	2F1	42.76 R	32.90	38.70	0.0	0.00	0.00	0.00			
		-38.45 L	-29.58	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.25 R	40.20	42.70	0.0	0.00	0.00	0.00			
		-55.01 L	-42.32	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.39 R	37.22	46.70	0.0	0.00	0.00	0.00			
		-58.96 L	-45.36	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.89 R	39.92	44.70	0.0	0.00	0.00	0.00			
		-51.32 L	-39.47	2.35	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	2.80	2.51	2.51	2.82	HS 50.18	90.3
HS20	4.67	4.18	4.19	4.70	HS 83.64	150.5
2F1	7.22	6.77	6.48	7.60	0.00	97.2
3F1	5.91	4.73	5.30	5.31	0.00	108.8
4F1	6.39	4.41	5.72	4.96	0.00	119.2
5C1	5.95	5.07	5.34	5.70	0.00	202.9

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
0.5	0.0	5.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.4	66.2
OPER	151.3	-122.3	110.4

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	-3.11	27.47	-2.39	21.13	-4.78	23.07	-3.67	17.75
OPER	HS20	-3.11	27.47	-2.39	21.13	-4.78	23.07	-3.67	17.75
OPER	2F1	-2.18	16.65	-1.68	12.81	0.00	0.00	0.00	0.00
OPER	3F1	-3.12	22.50	-2.40	17.31	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	23.34	-2.57	17.95	0.00	0.00	0.00	0.00
OPER	5C1	-4.95	21.74	-3.81	16.72	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.37	2.41	HS 48.24	86.8
HS20	25.61	4.02	HS 80.40	144.7
2F1	56.17	6.63	0.00	99.5
3F1	39.15	4.91	0.00	112.9
4F1	36.62	4.73	0.00	127.7
5C1	24.70	5.08	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -0.7
Superimposed Dead Load Moment -7.6

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. 162.6	164.3	-171.0	164.3	-171.0	172.6	-162.6	172.6	-
OPER 271.1	279.4	-279.4	279.4	-279.4	287.7	-271.1	287.7	-

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	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70	
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27
OPER	HS20	66.16 R	50.89	56.70	0.0	45.53	35.02	28.70	
		-62.25 L	-47.88	-8.87	0.0	-42.47	-32.67	14.35	38.27
OPER	2F1	42.76 R	32.90	38.70	0.0	0.00	0.00	0.00	
		-38.45 L	-29.58	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.25 R	40.20	42.70	0.0	0.00	0.00	0.00	
		-55.01 L	-42.32	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.39 R	37.22	46.70	0.0	0.00	0.00	0.00	
		-58.96 L	-45.36	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.89 R	39.92	44.70	0.0	0.00	0.00	0.00	
		-51.32 L	-39.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.61	2.61	2.61	2.61	HS 52.19	93.9
HS20	4.35	4.35	4.35	4.35	HS 86.98	156.6
2F1	6.73	7.05	6.73	7.05	0.00	100.9
3F1	5.51	4.93	5.51	4.93	0.00	113.3
4F1	5.95	4.60	5.95	4.60	0.00	124.1

5C1

5.55

5.28

5.55

5.28

0.00

211.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 2.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.5

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	178.1	-163.4	158.9	-182.6
OPER	300.6C	-268.7	268.7	-300.6C	296.9	-272.4	264.9	-304.4

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	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09			
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00		
OPER	HS20	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09			
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00		
OPER	2F1	61.53 R	47.33	41.09	0.0	0.00	0.00	0.00			
		-31.92 L	-24.56	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	77.76 R	59.81	45.09	0.0	0.00	0.00	0.00			
		-45.67 L	-35.13	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	79.23 R	60.95	45.09	0.0	0.00	0.00	0.00			
		-48.95 L	-37.65	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	75.97 R	58.44	47.09	0.0	0.00	0.00	0.00			
		-46.94 L	-36.11	3.13	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	1.91	3.16	1.71	3.53	HS 34.09	61.4
HS20	3.18	5.27	2.84	5.89	HS 56.82	102.3
2F1	4.82	8.53	4.30	9.54	0.00	64.6
3F1	3.82	5.97	3.41	6.66	0.00	78.4
4F1	3.75	5.57	3.34	6.22	0.00	90.3
5C1	3.91	5.80	3.49	6.48	0.00	139.5

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.	2.300		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	-5.73	22.82	-4.41	17.55	-7.33	19.82	-5.64	15.24
OPER	HS20	-5.73	22.82	-4.41	17.55	-7.33	19.82	-5.64	15.24
OPER	2F1	-4.04	13.99	-3.10	10.76	0.00	0.00	0.00	0.00
OPER	3F1	-4.24	18.48	-3.26	14.21	0.00	0.00	0.00	0.00
OPER	4F1	-3.34	19.08	-2.57	14.68	0.00	0.00	0.00	0.00
OPER	5C1	-7.03	17.87	-5.41	13.75	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.87	2.95	HS 59.01	106.2
HS20	16.44	4.92	HS 98.34	177.0
2F1	29.87	8.02	0.00	120.3
3F1	28.43	6.07	0.00	139.7
4F1	36.09	5.88	0.00	158.8
5C1	17.14	6.28	0.00	251.1

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 0.3
Superimposed Dead Load Moment 3.5

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. 169.9	169.1	-166.1	169.1	-166.1	165.4	-169.9	165.4	-
OPER 283.2	279.4	-279.4	279.4	-279.4	275.6	-283.2	275.6	-

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	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09	
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00
OPER	HS20	93.24 R	71.73	59.09	0.0	67.74	52.11	31.09	
		-51.67 L	-39.75	-8.87	0.0	-37.40	-28.77	14.35	0.00
OPER	2F1	61.53 R	47.33	41.09	0.0	0.00	0.00	0.00	
		-31.92 L	-24.56	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	77.76 R	59.81	45.09	0.0	0.00	0.00	0.00	
		-45.67 L	-35.13	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	79.23 R	60.95	45.09	0.0	0.00	0.00	0.00	
		-48.95 L	-37.65	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	75.97 R	58.44	47.09	0.0	0.00	0.00	0.00	
		-46.94 L	-36.11	3.13	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	3.29	1.77	3.29	HS 35.47	63.9
HS20	2.96	5.48	2.96	5.48	HS 59.12	106.4
2F1	4.48	8.87	4.48	8.87	0.00	67.2
3F1	3.55	6.20	3.55	6.20	0.00	81.5
4F1	3.48	5.78	3.48	5.78	0.00	93.9

5C1 3.63 6.03 3.63 6.03 0.00 145.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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. 2.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
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	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48			
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00		
OPER	HS20	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48			
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00		
OPER	2F1	71.35 R	54.88	43.48	0.0	0.00	0.00	0.00			
		-25.39 L	-19.53	6.74	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.64 R	69.72	43.48	0.0	0.00	0.00	0.00			
		-36.32 L	-27.94	4.35	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.79 R	74.46	47.48	0.0	0.00	0.00	0.00			
		-38.93 L	-29.95	1.13	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	88.69 R	68.22	84.48	0.0	0.00	0.00	0.00			
		-43.24 L	-33.26	4.01	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	1.68	4.09	1.50	4.56	HS 29.93	53.9
HS20	2.80	6.82	2.49	7.60	HS 49.88	89.8
2F1	4.05	11.04	3.60	12.30	0.00	54.1
3F1	3.19	7.72	2.84	8.60	0.00	65.2
4F1	2.99	7.20	2.66	8.02	0.00	71.7
5C1	3.26	6.48	2.90	7.22	0.00	116.0

SHEAR 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 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	-71.2	68.4
OPER	151.3	-118.7	114.0

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	-10.63	19.05	-8.17	14.66	-10.19	16.54	-7.84	12.72
OPER	HS20	-10.63	19.05	-8.17	14.66	-10.19	16.54	-7.84	12.72
OPER	2F1	-6.36	11.29	-4.90	8.68	0.00	0.00	0.00	0.00
OPER	3F1	-7.46	14.50	-5.74	11.16	0.00	0.00	0.00	0.00
OPER	4F1	-6.23	14.61	-4.79	11.24	0.00	0.00	0.00	0.00
OPER	5C1	-9.39	14.89	-7.22	11.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.70	3.59	HS 71.80	129.2
HS20	11.18	5.98	HS 119.66	215.4
2F1	18.66	10.10	0.00	151.5
3F1	15.91	7.86	0.00	180.8
4F1	19.05	7.80	0.00	210.6
5C1	12.65	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
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. 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	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48	
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00
OPER	HS20	103.09 R	79.30	61.48	0.0	80.84	62.18	33.48	
		-41.10 L	-31.61	-8.87	0.0	-32.32	-24.87	14.35	0.00
OPER	2F1	71.35 R	54.88	43.48	0.0	0.00	0.00	0.00	
		-25.39 L	-19.53	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.64 R	69.72	43.48	0.0	0.00	0.00	0.00	
		-36.32 L	-27.94	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.79 R	74.46	47.48	0.0	0.00	0.00	0.00	
		-38.93 L	-29.95	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	88.69 R	68.22	84.48	0.0	0.00	0.00	0.00	
		-43.24 L	-33.26	4.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	4.25	1.56	4.25	HS 31.18	56.1
HS20	2.60	7.08	2.60	7.08	HS 51.96	93.5
2F1	3.75	11.46	3.75	11.46	0.00	56.3
3F1	2.95	8.01	2.95	8.01	0.00	68.0
4F1	2.77	7.47	2.77	7.47	0.00	74.7

5C1

3.02

6.73

3.02

6.73

0.00

120.8

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 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	171.3	-170.2	152.1	-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	98.70	L	75.92	21.88	0.0	86.01	66.16	35.88		
		-30.52	L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00	
OPER	HS20	98.70	L	75.92	21.88	0.0	86.01	66.16	35.88		
		-30.52	L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00	
OPER	2F1	72.01	L	55.39	25.88	0.0	0.00	0.00	0.00		
		-18.86	L	-14.51	6.74	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	95.59	R	73.53	45.88	0.0	0.00	0.00	0.00		
		-26.98	L	-20.75	4.35	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	99.25	R	76.34	49.88	0.0	0.00	0.00	0.00		
		-28.91	L	-22.24	1.13	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	93.55	R	71.96	86.88	0.0	0.00	0.00	0.00		
		-40.83	L	-31.41	4.74	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	5.58	1.54	6.21	HS 30.83	55.5
HS20	2.89	9.30	2.57	10.34	HS 51.38	92.5
2F1	3.97	15.05	3.52	16.74	0.00	52.8
3F1	2.99	10.52	2.65	11.70	0.00	61.0
4F1	2.88	9.81	2.56	10.92	0.00	69.0
5C1	3.05	6.95	2.71	7.73	0.00	108.4

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.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	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	-15.05	15.01	-11.58	11.54	-13.27	13.32	-10.21	10.25
OPER	HS20	-15.05	15.01	-11.58	11.54	-13.27	13.32	-10.21	10.25
OPER	2F1	-8.91	8.64	-6.86	6.64	0.00	0.00	0.00	0.00
OPER	3F1	-11.05	10.72	-8.50	8.25	0.00	0.00	0.00	0.00
OPER	4F1	-10.52	10.08	-8.10	7.75	0.00	0.00	0.00	0.00
OPER	5C1	-11.96	12.26	-9.20	9.43	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.66	4.63	HS 92.61	166.7
HS20	7.77	7.72	HS 154.34	277.8
2F1	13.12	13.41	0.00	196.8
3F1	10.59	10.80	0.00	243.4
4F1	11.11	11.49	0.00	300.0
5C1	9.78	9.44	0.00	377.7

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 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 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	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	98.70 L	75.92	21.88	0.0	86.01	66.16	35.88	
		-30.52 L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00
OPER	HS20	98.70 L	75.92	21.88	0.0	86.01	66.16	35.88	
		-30.52 L	-23.48	-8.87	0.0	-27.25	-20.96	14.35	0.00
OPER	2F1	72.01 L	55.39	25.88	0.0	0.00	0.00	0.00	
		-18.86 L	-14.51	6.74	0.0	0.00	0.00	0.00	0.00
OPER	3F1	95.59 R	73.53	45.88	0.0	0.00	0.00	0.00	
		-26.98 L	-20.75	4.35	0.0	0.00	0.00	0.00	0.00
OPER	4F1	99.25 R	76.34	49.88	0.0	0.00	0.00	0.00	
		-28.91 L	-22.24	1.13	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.55 R	71.96	86.88	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	4.74	0.0	0.00	0.00	0.00	0.00

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	5.79	1.61	5.79	HS 32.14	57.8
HS20	2.68	9.65	2.68	9.65	HS 53.56	96.4
2F1	3.67	15.62	3.67	15.62	0.00	55.1
3F1	2.77	10.92	2.77	10.92	0.00	63.6
4F1	2.66	10.19	2.66	10.19	0.00	71.9

5C1	2.83	7.21	2.83	7.21	0.00	113.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 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.	180.4C	-161.2	161.2	-180.4C	172.0	-169.6	152.8	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.6	-282.7	254.7	-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	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27			
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00		
OPER	HS20	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27			
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00		
OPER	2F1	70.62 L	54.33	28.27	0.0	0.00	0.00	0.00			
		-20.83 R	-16.03	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	89.38 L	68.76	28.27	0.0	0.00	0.00	0.00			
		-29.89 R	-22.99	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	95.46 L	73.43	24.27	0.0	0.00	0.00	0.00			
		-32.16 R	-24.74	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.03 L	69.26	26.27	0.0	0.00	0.00	0.00			
		-39.49 L	-30.38	5.62	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	1.70	5.47	1.51	6.09	HS 30.20	54.4
HS20	2.83	9.12	2.52	10.15	HS 50.33	90.6
2F1	4.06	13.57	3.61	15.10	0.00	54.1
3F1	3.21	9.46	2.85	10.53	0.00	65.5
4F1	3.00	8.79	2.67	9.78	0.00	72.0
5C1	3.18	7.16	2.83	7.97	0.00	113.1

SHEAR 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 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	-115.0	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	-18.94	10.44	-14.57	8.03	-16.49	10.27	-12.69	7.90
OPER	HS20	-18.94	10.44	-14.57	8.03	-16.49	10.27	-12.69	7.90
OPER	2F1	-11.59	6.14	-8.91	4.73	0.00	0.00	0.00	0.00
OPER	3F1	-14.90	7.24	-11.46	5.57	0.00	0.00	0.00	0.00
OPER	4F1	-15.05	6.14	-11.58	4.72	0.00	0.00	0.00	0.00
OPER	5C1	-14.71	9.99	-11.31	7.68	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.64	6.77	HS 72.89	131.2
HS20	6.07	11.28	HS 121.48	218.7
2F1	9.93	19.16	0.00	148.9
3F1	7.72	16.25	0.00	177.5
4F1	7.64	19.18	0.00	206.3
5C1	7.82	11.79	0.00	312.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
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. 176.0	173.2	-162.0	173.2	-162.0	159.2	-176.0	159.2	-
OPER 293.4	279.4	-279.4	279.4	-279.4	265.4	-293.4	265.4	-

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	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27	
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00
OPER	HS20	101.20 L	77.84	10.27	0.0	81.04	62.34	38.27	
		-30.99 R	-23.84	80.62	0.0	-28.44	-21.88	57.40	0.00
OPER	2F1	70.62 L	54.33	28.27	0.0	0.00	0.00	0.00	
		-20.83 R	-16.03	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.38 L	68.76	28.27	0.0	0.00	0.00	0.00	
		-29.89 R	-22.99	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	95.46 L	73.43	24.27	0.0	0.00	0.00	0.00	
		-32.16 R	-24.74	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.03 L	69.26	26.27	0.0	0.00	0.00	0.00	
		-39.49 L	-30.38	5.62	0.0	0.00	0.00	0.00	0.00

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	5.68	1.57	5.68	HS 31.47	56.6
HS20	2.62	9.47	2.62	9.47	HS 52.45	94.4
2F1	3.76	14.08	3.76	14.08	0.00	56.4
3F1	2.97	9.82	2.97	9.82	0.00	68.3
4F1	2.78	9.12	2.78	9.12	0.00	75.1

5C1	2.95	7.43	2.95	7.43	0.00	117.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 8.0

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	175.2	-166.4	156.0	-185.6
OPER	300.6C	-268.7	268.7	-300.6C	292.0	-277.3	260.0	-309.3

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	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66			
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00		
OPER	HS20	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66			
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00		
OPER	2F1	59.96 L	46.12	30.66	0.0	0.00	0.00	0.00			
		-26.04 R	-20.03	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.56 L	58.12	26.66	0.0	0.00	0.00	0.00			
		-37.36 R	-28.74	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.83 L	59.10	26.66	0.0	0.00	0.00	0.00			
		-40.20 R	-30.92	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.95 R	60.73	87.66	0.0	0.00	0.00	0.00			
		-39.92 R	-30.70	68.62	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	1.93	4.30	1.72	4.79	HS 34.40	61.9
HS20	3.22	7.16	2.87	7.98	HS 57.33	103.2
2F1	4.87	10.65	4.34	11.88	0.00	65.1
3F1	3.86	7.42	3.44	8.28	0.00	79.1
4F1	3.80	6.90	3.38	7.69	0.00	91.4
5C1	3.70	6.95	3.29	7.75	0.00	131.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

2.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-2.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.9	71.7
OPER	151.3	-113.2	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	-22.69	5.44	-17.45	4.18	-19.75	7.46	-15.20	5.74
OPER	HS20	-22.69	5.44	-17.45	4.18	-19.75	7.46	-15.20	5.74
OPER	2F1	-14.29	3.90	-10.99	3.00	0.00	0.00	0.00	0.00
OPER	3F1	-18.91	4.16	-14.54	3.20	0.00	0.00	0.00	0.00
OPER	4F1	-19.46	4.16	-14.97	3.20	0.00	0.00	0.00	0.00
OPER	5C1	-17.98	7.82	-13.83	6.01	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.99	9.61	HS 59.88	107.8
HS20	4.99	16.01	HS 99.80	179.6
2F1	7.92	30.67	0.00	118.8
3F1	5.99	28.73	0.00	137.7
4F1	5.82	28.73	0.00	157.1
5C1	6.30	15.29	0.00	251.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.0

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. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 288.0	279.4	-279.4	279.4	-279.4	270.8	-288.0	270.8	-

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	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66	
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00
OPER	HS20	90.72 L	69.78	12.66	0.0	68.31	52.54	40.66	
		-38.73 R	-29.80	80.62	0.0	-31.77	-24.44	57.40	0.00
OPER	2F1	59.96 L	46.12	30.66	0.0	0.00	0.00	0.00	
		-26.04 R	-20.03	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.56 L	58.12	26.66	0.0	0.00	0.00	0.00	
		-37.36 R	-28.74	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.83 L	59.10	26.66	0.0	0.00	0.00	0.00	
		-40.20 R	-30.92	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.95 R	60.73	87.66	0.0	0.00	0.00	0.00	
		-39.92 R	-30.70	68.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.46	1.79	4.46	HS 35.82	64.5
HS20	2.98	7.44	2.98	7.44	HS 59.70	107.5
2F1	4.52	11.06	4.52	11.06	0.00	67.7
3F1	3.58	7.71	3.58	7.71	0.00	82.4
4F1	3.52	7.16	3.52	7.16	0.00	95.2

5C1

3.43

7.22

3.43

7.22

0.00

137.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -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	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05			
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23		
OPER	HS20	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05			
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23		
OPER	2F1	40.60 L	31.23	33.05	0.0	0.00	0.00	0.00			
		-31.25 R	-24.04	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.01 L	37.70	29.05	0.0	0.00	0.00	0.00			
		-44.83 R	-34.49	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.87 L	34.51	25.05	0.0	0.00	0.00	0.00			
		-48.24 R	-37.11	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.70 R	45.16	90.05	0.0	0.00	0.00	0.00			
		-41.67 R	-32.05	69.40	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	2.88	3.45	2.58	3.87	HS 51.54	92.8
HS20	4.80	5.76	4.30	6.45	HS 85.90	154.6
2F1	7.43	8.56	6.64	9.59	0.00	99.6
3F1	6.16	5.97	5.50	6.68	0.00	126.6
4F1	6.72	5.55	6.01	6.21	0.00	149.8
5C1	5.14	6.42	4.59	7.19	0.00	183.8

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
-0.4	-4.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.8
OPER	151.3	-111.4	121.3

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	-27.81	4.22	-21.39	3.25	-22.96	4.98	-17.66	3.83
OPER	HS20	-27.81	4.22	-21.39	3.25	-22.96	4.98	-17.66	3.83
OPER	2F1	-16.92	2.73	-13.01	2.10	0.00	0.00	0.00	0.00
OPER	3F1	-22.91	3.91	-17.62	3.01	0.00	0.00	0.00	0.00
OPER	4F1	-23.62	4.16	-18.17	3.20	0.00	0.00	0.00	0.00
OPER	5C1	-21.57	5.81	-16.59	4.47	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.40	14.60	HS 48.09	86.6
HS20	4.01	24.34	HS 80.15	144.3
2F1	6.59	44.42	0.00	98.8
3F1	4.86	31.05	0.00	111.9
4F1	4.72	29.16	0.00	127.4
5C1	5.17	20.87	0.00	206.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800
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	
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	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05	
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23
OPER	HS20	62.79 L	48.30	15.05	0.0	47.65	36.66	43.05	
		-46.48 R	-35.76	80.62	0.0	-37.04	-28.49	57.40	105.23
OPER	2F1	40.60 L	31.23	33.05	0.0	0.00	0.00	0.00	
		-31.25 R	-24.04	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.01 L	37.70	29.05	0.0	0.00	0.00	0.00	
		-44.83 R	-34.49	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.87 L	34.51	25.05	0.0	0.00	0.00	0.00	
		-48.24 R	-37.11	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.70 R	45.16	90.05	0.0	0.00	0.00	0.00	
		-41.67 R	-32.05	69.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.59	96.5
HS20	4.47	5.99	4.47	5.99	HS 89.32	160.8
2F1	6.91	8.91	6.91	8.91	0.00	103.6
3F1	5.72	6.21	5.72	6.21	0.00	131.6
4F1	6.25	5.77	6.25	5.77	0.00	155.8

5C1	4.78	6.68	4.78	6.68	0.00	191.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -13.7

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	189.4	-152.2	170.2	-171.4
OPER	300.6C	-268.7	268.7	-300.6C	315.6	-253.7	283.6	-285.6

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	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44			
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88		
OPER	HS20	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44			
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88		
OPER	2F1	14.14 L	10.88	35.44	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	65.01	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.02 R	10.78	91.32	0.0	0.00	0.00	0.00			
		-52.30 R	-40.23	67.40	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.90 R	11.46	95.32	0.0	0.00	0.00	0.00			
		-56.28 R	-43.29	70.62	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.62 R	22.79	92.44	0.0	0.00	0.00	0.00			
		-45.81 R	-35.24	71.79	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	7.05	2.51	6.34	2.82	HS 50.10	90.2
HS20	11.75	4.18	10.56	4.70	HS 83.50	150.3
2F1	22.32	6.96	20.06	7.84	0.00	104.4
3F1	22.52	4.85	20.24	5.46	0.00	111.5
4F1	21.18	4.51	19.04	5.07	0.00	121.7
5C1	10.65	5.54	9.57	6.24	0.00	221.5

SHEAR 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 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	-65.8	73.9
OPER	151.3	-109.6	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	-32.97	4.42	-25.36	3.40	-26.00	4.17	-20.00	3.20
OPER	HS20	-32.97	4.42	-25.36	3.40	-26.00	4.17	-20.00	3.20
OPER	2F1	-19.36	2.73	-14.89	2.10	0.00	0.00	0.00	0.00
OPER	3F1	-26.76	3.91	-20.58	3.01	0.00	0.00	0.00	0.00
OPER	4F1	-27.60	4.19	-21.23	3.22	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	4.03	-19.36	3.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	16.71	HS 39.91	71.8
HS20	3.33	27.84	HS 66.52	119.7
2F1	5.66	45.07	0.00	84.9
3F1	4.10	31.51	0.00	94.2
4F1	3.97	29.40	0.00	107.2
5C1	4.36	30.57	0.00	174.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.7

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. 158.6	161.6	-173.6	161.6	-173.6	176.6	-158.6	176.6	-
OPER 264.4	279.4	-279.4	279.4	-279.4	294.4	-264.4	294.4	-

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	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44	
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88
OPER	HS20	17.82 L	13.70	17.44	0.0	26.86	20.66	45.44	
		-60.76 L	-46.74	38.62	0.0	-56.30	-43.31	57.40	35.88
OPER	2F1	14.14 L	10.88	35.44	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	65.01	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.02 R	10.78	91.32	0.0	0.00	0.00	0.00	
		-52.30 R	-40.23	67.40	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.90 R	11.46	95.32	0.0	0.00	0.00	0.00	
		-56.28 R	-43.29	70.62	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.62 R	22.79	92.44	0.0	0.00	0.00	0.00	
		-45.81 R	-35.24	71.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.58	2.61	6.58	2.61	HS 52.22	94.0
HS20	10.96	4.35	10.96	4.35	HS 87.04	156.7
2F1	20.82	7.25	20.82	7.25	0.00	108.8
3F1	21.00	5.05	21.00	5.05	0.00	116.3
4F1	19.76	4.70	19.76	4.70	0.00	126.8

5C1	9.94	5.77	9.94	5.77	0.00	230.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-2.8	-30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35			
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27		57.40	
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35			
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27		57.40	
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00		0.00	
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00		0.00	
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00		0.00	
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00		0.00	
		-66.42 L	-51.09	43.01	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	8.97	1.33	8.11	1.51	HS 26.61	47.9
HS20	14.94	2.22	13.51	2.52	HS 44.35	79.8
2F1	24.19	5.53	21.87	6.28	0.00	82.9
3F1	16.91	3.41	15.29	3.88	0.00	78.5
4F1	15.77	2.92	14.26	3.32	0.00	78.9
5C1	18.67	3.54	16.88	4.03	0.00	141.8

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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.2	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.7	64.5
OPER	151.3	-107.8	107.5

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	-32.97	37.61	-25.36	28.93	-26.00	28.93	-20.00	22.25
OPER	HS20	-32.97	37.61	-25.36	28.93	-26.00	28.93	-20.00	22.25
OPER	2F1	-19.36	21.46	-14.89	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.76	30.17	-20.58	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.60	31.71	-21.23	24.39	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	28.29	-19.36	21.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.71	1.71	HS 34.23	61.6
HS20	2.85	2.86	HS 57.06	102.7
2F1	5.01	5.01	0.00	75.1
3F1	3.56	3.56	0.00	81.9
4F1	3.38	3.39	0.00	91.3
5C1	3.77	3.80	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -30.5

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. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00	
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00	
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00	
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00	
		-66.42 L	-51.09	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.40	1.39	8.40	1.39	HS 27.82	50.1
HS20	13.99	2.32	13.99	2.32	HS 46.37	83.5
2F1	22.65	5.78	22.65	5.78	0.00	86.7
3F1	15.83	3.57	15.83	3.57	0.00	82.1
4F1	14.77	3.06	14.77	3.06	0.00	82.5

5C1	17.49	3.71	17.49	3.71	0.00	148.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -2.8
Superimposed Dead Load Moment -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35			
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40		
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35			
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40		
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00			
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00			
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00			
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00			
		-66.42 L	-51.09	43.01	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	8.97	1.33	8.11	1.51	HS 26.61	47.9
HS20	14.94	2.22	13.51	2.52	HS 44.35	79.8
2F1	24.19	5.53	21.87	6.28	0.00	82.9
3F1	16.91	3.41	15.29	3.88	0.00	78.5
4F1	15.77	2.92	14.26	3.32	0.00	78.9
5C1	18.67	3.54	16.88	4.03	0.00	141.8

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.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.8	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.5
OPER	151.3	-107.8	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	-37.80	37.61	-29.08	28.93	-28.78	28.93	-22.14	22.25
OPER	HS20	-37.80	37.61	-29.08	28.93	-28.78	28.93	-22.14	22.25
OPER	2F1	-21.52	21.46	-16.55	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.29	30.17	-23.30	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.88	31.71	-24.52	24.39	0.00	0.00	0.00	0.00
OPER	5C1	-28.58	28.29	-21.99	21.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.23	61.6
HS20	2.85	2.86	HS 57.06	102.7
2F1	5.01	5.01	0.00	75.1
3F1	3.56	3.56	0.00	81.9
4F1	3.38	3.39	0.00	91.3
5C1	3.77	3.80	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -30.5

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. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

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	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	HS20	22.35 L	17.19	-8.87	0.0	19.84	15.26	14.35	
		-106.16 L	-81.66	27.01	0.0	-94.15	-72.42	38.27	57.40
OPER	2F1	13.80 L	10.62	6.74	0.0	0.00	0.00	0.00	
		-42.58 L	-32.75	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 L	15.19	4.35	0.0	0.00	0.00	0.00	
		-68.95 R	-53.04	52.62	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 L	16.28	1.13	0.0	0.00	0.00	0.00	
		-80.57 R	-61.98	53.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 L	13.75	-35.04	0.0	0.00	0.00	0.00	
		-66.42 L	-51.09	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.40	1.39	8.40	1.39	HS 27.82	50.1
HS20	13.99	2.32	13.99	2.32	HS 46.37	83.5
2F1	22.65	5.78	22.65	5.78	0.00	86.7
3F1	15.83	3.57	15.83	3.57	0.00	82.1
4F1	14.77	3.06	14.77	3.06	0.00	82.5

5C1	17.49	3.71	17.49	3.71	0.00	148.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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.	3.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-12.9

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	188.8	-152.7	169.7	-171.9
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.5	282.8	-286.5

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	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23			
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79		
OPER	HS20	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23			
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79		
OPER	2F1	14.51 R	11.16	60.23	0.0	0.00	0.00	0.00			
		-37.18 L	-28.60	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.24 L	13.27	4.35	0.0	0.00	0.00	0.00			
		-53.32 L	-41.02	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.32 L	14.10	0.35	0.0	0.00	0.00	0.00			
		-57.36 L	-44.12	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.79 L	25.22	3.23	0.0	0.00	0.00	0.00			
		-46.95 L	-36.12	24.66	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	6.81	2.47	6.12	2.78	HS 49.37	88.9
HS20	11.35	4.11	10.20	4.63	HS 82.28	148.1
2F1	21.69	6.85	19.49	7.71	0.00	102.7
3F1	18.25	4.77	16.40	5.37	0.00	109.8
4F1	17.18	4.44	15.43	5.00	0.00	119.8
5C1	9.60	5.42	8.62	6.10	0.00	216.8

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

6.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.1	65.6
OPER	151.3	-123.5	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	-3.17	32.74	-2.43	25.18	-3.56	26.12	-2.74	20.09
OPER	HS20	-3.17	32.74	-2.43	25.18	-3.56	26.12	-2.74	20.09
OPER	2F1	-2.22	19.27	-1.71	14.82	0.00	0.00	0.00	0.00
OPER	3F1	-3.18	26.59	-2.45	20.46	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	27.40	-2.62	21.08	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	24.87	-2.48	19.13	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.82	2.00	HS 40.05	72.1
HS20	34.71	3.34	HS 66.75	120.2
2F1	55.69	5.67	0.00	85.1
3F1	38.81	4.11	0.00	94.5
4F1	36.31	3.99	0.00	107.7
5C1	38.25	4.39	0.00	175.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.2
Superimposed Dead Load Moment -12.9

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.	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
159.2								
OPER	279.4	-279.4	279.4	-279.4	293.5	-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	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23	
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79
OPER	HS20	18.42 R	14.17	78.23	0.0	27.72	21.33	50.23	
		-61.87 R	-47.59	57.05	0.0	-56.08	-43.14	38.27	59.79
OPER	2F1	14.51 R	11.16	60.23	0.0	0.00	0.00	0.00	
		-37.18 L	-28.60	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.24 L	13.27	4.35	0.0	0.00	0.00	0.00	
		-53.32 L	-41.02	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.32 L	14.10	0.35	0.0	0.00	0.00	0.00	
		-57.36 L	-44.12	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.79 L	25.22	3.23	0.0	0.00	0.00	0.00	
		-46.95 L	-36.12	24.66	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.35	2.57	6.35	2.57	HS 51.45	92.6
HS20	10.59	4.29	10.59	4.29	HS 85.76	154.4
2F1	20.23	7.14	20.23	7.14	0.00	107.0
3F1	17.02	4.97	17.02	4.97	0.00	114.4
4F1	16.02	4.62	16.02	4.62	0.00	124.9

5C1	8.95	5.65	8.95	5.65	0.00	226.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 0.0
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	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.4

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	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62			
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36		
OPER	HS20	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62			
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36		
OPER	2F1	40.79 R	31.37	62.62	0.0	0.00	0.00	0.00			
		-31.78 L	-24.44	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.29 R	37.91	66.62	0.0	0.00	0.00	0.00			
		-45.58 L	-35.06	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	45.17 R	34.75	70.62	0.0	0.00	0.00	0.00			
		-49.03 L	-37.71	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.94 L	46.87	5.62	0.0	0.00	0.00	0.00			
		-42.43 L	-32.64	26.27	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	3.45	2.55	3.86	HS 50.98	91.8
HS20	4.76	5.74	4.25	6.43	HS 84.97	152.9
2F1	7.35	8.48	6.57	9.48	0.00	98.5
3F1	6.09	5.91	5.44	6.61	0.00	125.0
4F1	6.64	5.49	5.93	6.15	0.00	148.4
5C1	4.92	6.35	4.40	7.10	0.00	175.9

SHEAR 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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
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0.4	0.0	4.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.6
OPER	151.3	-121.7	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	-3.17	27.56	-2.43	21.20	-4.95	23.04	-3.81	17.72
OPER	HS20	-3.17	27.56	-2.43	21.20	-4.95	23.04	-3.81	17.72
OPER	2F1	-2.22	16.79	-1.71	12.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.18	22.71	-2.45	17.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	23.44	-2.62	18.03	0.00	0.00	0.00	0.00
OPER	5C1	-4.90	21.30	-3.77	16.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.75	2.42	HS 48.35	87.0
HS20	24.59	4.03	HS 80.59	145.1
2F1	54.88	6.61	0.00	99.2
3F1	38.25	4.89	0.00	112.5
4F1	35.78	4.74	0.00	127.9
5C1	24.86	5.21	0.00	208.6

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 0.0
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. 168.1	167.9	-167.3	167.9	-167.3	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 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	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62	
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36
OPER	HS20	63.06 R	48.51	80.62	0.0	47.85	36.81	52.62	
		-46.91 L	-36.08	15.05	0.0	-35.33	-27.18	38.27	69.36
OPER	2F1	40.79 R	31.37	62.62	0.0	0.00	0.00	0.00	
		-31.78 L	-24.44	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.29 R	37.91	66.62	0.0	0.00	0.00	0.00	
		-45.58 L	-35.06	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	45.17 R	34.75	70.62	0.0	0.00	0.00	0.00	
		-49.03 L	-37.71	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.94 L	46.87	5.62	0.0	0.00	0.00	0.00	
		-42.43 L	-32.64	26.27	0.0	0.00	0.00	0.00	0.00

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	3.58	2.65	3.58	HS 53.03	95.4
HS20	4.42	5.97	4.42	5.97	HS 88.38	159.1
2F1	6.83	8.81	6.83	8.81	0.00	102.5
3F1	5.65	6.15	5.65	6.15	0.00	130.0
4F1	6.17	5.71	6.17	5.71	0.00	154.3

5C1	4.57	6.60	4.57	6.60	0.00	182.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 0.9
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	173.6	-168.0	154.4	-187.2
OPER	300.6C	-268.7	268.7	-300.6C	289.3	-279.9	257.4	-311.9

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	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01			
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00		
OPER	HS20	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01			
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00		
OPER	2F1	59.80 R	46.00	65.01	0.0	0.00	0.00	0.00			
		-26.38 L	-20.29	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.32 R	57.94	69.01	0.0	0.00	0.00	0.00			
		-37.84 L	-29.11	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.61 R	58.93	69.01	0.0	0.00	0.00	0.00			
		-40.70 L	-31.31	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.03 L	61.56	8.01	0.0	0.00	0.00	0.00			
		-39.75 L	-30.58	27.05	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	1.91	4.31	1.70	4.81	HS 34.02	61.2
HS20	3.19	7.19	2.84	8.01	HS 56.70	102.1
2F1	4.84	10.61	4.30	11.82	0.00	64.6
3F1	3.84	7.40	3.42	8.24	0.00	78.6
4F1	3.78	6.88	3.36	7.66	0.00	90.7
5C1	3.62	7.04	3.22	7.85	0.00	128.6

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
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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	-5.52	22.61	-4.24	17.39	-7.47	19.80	-5.75	15.23
OPER	HS20	-5.52	22.61	-4.24	17.39	-7.47	19.80	-5.75	15.23
OPER	2F1	-3.97	14.14	-3.05	10.88	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.69	-3.26	14.37	0.00	0.00	0.00	0.00
OPER	4F1	-3.40	19.24	-2.62	14.80	0.00	0.00	0.00	0.00
OPER	5C1	-6.91	17.80	-5.31	13.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.99	HS 59.90	107.8
HS20	16.05	4.99	HS 99.84	179.7
2F1	30.20	7.98	0.00	119.7
3F1	28.31	6.04	0.00	138.9
4F1	35.25	5.87	0.00	158.4
5C1	17.36	6.34	0.00	253.6

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 0.9
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. 174.4	172.2	-163.1	172.2	-163.1	160.9	-174.4	160.9	-
OPER 290.7	279.4	-279.4	279.4	-279.4	268.1	-290.7	268.1	-

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	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01	
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00
OPER	HS20	90.77 R	69.83	83.01	0.0	69.19	53.22	55.01	
		-38.94 L	-29.95	15.05	0.0	-31.05	-23.89	38.27	0.00
OPER	2F1	59.80 R	46.00	65.01	0.0	0.00	0.00	0.00	
		-26.38 L	-20.29	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.32 R	57.94	69.01	0.0	0.00	0.00	0.00	
		-37.84 L	-29.11	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.61 R	58.93	69.01	0.0	0.00	0.00	0.00	
		-40.70 L	-31.31	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.03 L	61.56	8.01	0.0	0.00	0.00	0.00	
		-39.75 L	-30.58	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	4.48	1.77	4.48	HS 35.44	63.8
HS20	2.95	7.47	2.95	7.47	HS 59.07	106.3
2F1	4.48	11.02	4.48	11.02	0.00	67.2
3F1	3.56	7.68	3.56	7.68	0.00	81.9
4F1	3.50	7.14	3.50	7.14	0.00	94.5

5C1	3.35	7.31	3.35	7.31	0.00	134.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 1.4
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	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.2

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	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40			
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00		
OPER	HS20	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40			
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00		
OPER	2F1	70.05 R	53.88	67.40	0.0	0.00	0.00	0.00			
		-20.98 L	-16.14	30.66	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.66 R	68.20	67.40	0.0	0.00	0.00	0.00			
		-30.09 L	-23.15	28.27	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.70 R	72.84	71.40	0.0	0.00	0.00	0.00			
		-32.37 L	-24.90	25.05	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.93 R	69.18	69.40	0.0	0.00	0.00	0.00			
		-37.70 L	-29.00	27.93	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	1.67	5.55	1.49	6.16	HS 29.72	53.5
HS20	2.79	9.24	2.48	10.27	HS 49.54	89.2
2F1	4.04	13.64	3.59	15.16	0.00	53.8
3F1	3.19	9.51	2.83	10.57	0.00	65.1
4F1	2.99	8.84	2.65	9.83	0.00	71.6
5C1	3.15	7.59	2.79	8.44	0.00	111.7

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.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)
0.1	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	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	-10.44	18.84	-8.03	14.49	-10.31	16.51	-7.93	12.70
OPER	HS20	-10.44	18.84	-8.03	14.49	-10.31	16.51	-7.93	12.70
OPER	2F1	-6.25	11.43	-4.81	8.79	0.00	0.00	0.00	0.00
OPER	3F1	-7.37	14.69	-5.67	11.30	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.80	-4.80	11.39	0.00	0.00	0.00	0.00
OPER	5C1	-9.22	14.79	-7.09	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.79	3.65	HS 73.03	131.5
HS20	11.31	6.09	HS 121.72	219.1
2F1	18.89	10.03	0.00	150.5
3F1	16.02	7.80	0.00	179.5
4F1	18.93	7.75	0.00	209.1
5C1	12.81	7.75	0.00	310.1

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 1.4
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. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

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	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40	
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00
OPER	HS20	101.38 R	77.98	85.40	0.0	81.95	63.04	57.40	
		-30.97 L	-23.82	15.05	0.0	-27.28	-20.99	38.27	0.00
OPER	2F1	70.05 R	53.88	67.40	0.0	0.00	0.00	0.00	
		-20.98 L	-16.14	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.66 R	68.20	67.40	0.0	0.00	0.00	0.00	
		-30.09 L	-23.15	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.70 R	72.84	71.40	0.0	0.00	0.00	0.00	
		-32.37 L	-24.90	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.93 R	69.18	69.40	0.0	0.00	0.00	0.00	
		-37.70 L	-29.00	27.93	0.0	0.00	0.00	0.00	0.00

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	5.75	1.55	5.75	HS 31.00	55.8
HS20	2.58	9.59	2.58	9.59	HS 51.66	93.0
2F1	3.74	14.15	3.74	14.15	0.00	56.1
3F1	2.95	9.87	2.95	9.87	0.00	67.9
4F1	2.77	9.17	2.77	9.17	0.00	74.7

5C1	2.91	7.88	2.91	7.88	0.00	116.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	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.	180.4C	-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	249.1	-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	97.81	L	75.24	45.79	0.0	86.88	66.83	59.79		
		-23.00	L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00	
OPER	HS20	97.81	L	75.24	45.79	0.0	86.88	66.83	59.79		
		-23.00	L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00	
OPER	2F1	71.08	L	54.68	49.79	0.0	0.00	0.00	0.00		
		-15.58	L	-11.99	30.66	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	94.19	R	72.45	69.79	0.0	0.00	0.00	0.00		
		-22.35	L	-17.19	28.27	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	97.83	R	75.25	73.79	0.0	0.00	0.00	0.00		
		-24.04	L	-18.49	25.05	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	93.08	L	71.60	8.79	0.0	0.00	0.00	0.00		
		-36.84	L	-28.34	28.66	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	1.72	7.35	1.53	8.17	HS 30.57	55.0
HS20	2.87	12.26	2.55	13.62	HS 50.94	91.7
2F1	3.95	18.49	3.51	20.55	0.00	52.6
3F1	2.98	12.89	2.64	14.32	0.00	60.8
4F1	2.87	11.99	2.55	13.32	0.00	68.8
5C1	3.02	7.82	2.68	8.69	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.	3.500		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	-14.90	14.90	-11.46	11.46	-13.40	13.28	-10.31	10.22
OPER	HS20	-14.90	14.90	-11.46	11.46	-13.40	13.28	-10.31	10.22
OPER	2F1	-8.78	8.76	-6.75	6.74	0.00	0.00	0.00	0.00
OPER	3F1	-10.90	10.87	-8.38	8.36	0.00	0.00	0.00	0.00
OPER	4F1	-10.30	10.26	-7.92	7.90	0.00	0.00	0.00	0.00
OPER	5C1	-11.79	11.71	-9.07	9.01	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.68	4.69	HS 93.64	168.6
HS20	7.80	7.82	HS 156.07	280.9
2F1	13.25	13.30	0.00	198.8
3F1	10.67	10.71	0.00	245.5
4F1	11.30	11.34	0.00	305.0
5C1	9.86	9.94	0.00	394.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
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	-
INV. 179.4	175.4	-159.8	175.4	-159.8	155.9	-179.4	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	97.81 L	75.24	45.79	0.0	86.88	66.83	59.79	
		-23.00 L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00
OPER	HS20	97.81 L	75.24	45.79	0.0	86.88	66.83	59.79	
		-23.00 L	-17.69	15.05	0.0	-23.51	-18.09	38.27	0.00
OPER	2F1	71.08 L	54.68	49.79	0.0	0.00	0.00	0.00	
		-15.58 L	-11.99	30.66	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.19 R	72.45	69.79	0.0	0.00	0.00	0.00	
		-22.35 L	-17.19	28.27	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.83 R	75.25	73.79	0.0	0.00	0.00	0.00	
		-24.04 L	-18.49	25.05	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.08 L	71.60	8.79	0.0	0.00	0.00	0.00	
		-36.84 L	-28.34	28.66	0.0	0.00	0.00	0.00	0.00

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	7.63	1.59	7.63	HS 31.88	57.4
HS20	2.66	12.71	2.66	12.71	HS 53.14	95.7
2F1	3.66	19.18	3.66	19.18	0.00	54.8
3F1	2.76	13.37	2.76	13.37	0.00	63.5
4F1	2.66	12.43	2.66	12.43	0.00	71.7

5C1	2.79	8.11	2.79	8.11	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600

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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 1.4
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	170.3	-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	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18			
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00		
OPER	HS20	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18			
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00		
OPER	2F1	70.00 L	53.84	52.18	0.0	0.00	0.00	0.00			
		-20.65 R	-15.89	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.57 L	68.13	52.18	0.0	0.00	0.00	0.00			
		-29.63 R	-22.79	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.60 L	72.77	48.18	0.0	0.00	0.00	0.00			
		-31.89 R	-24.53	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.27 L	68.67	50.18	0.0	0.00	0.00	0.00			
		-37.28 R	-28.68	90.93	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	1.68	5.58	1.49	6.20	HS 29.84	53.7
HS20	2.80	9.29	2.49	10.34	HS 49.74	89.5
2F1	4.05	13.82	3.60	15.37	0.00	54.0
3F1	3.20	9.64	2.84	10.72	0.00	65.4
4F1	3.00	8.95	2.66	9.96	0.00	71.9
5C1	3.18	7.66	2.82	8.52	0.00	112.8

SHEAR 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 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.	90.8	-68.6	71.0
OPER	151.3	-114.4	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	-18.83	10.43	-14.48	8.02	-16.63	10.20	-12.80	7.84
OPER	HS20	-18.83	10.43	-14.48	8.02	-16.63	10.20	-12.80	7.84
OPER	2F1	-11.45	6.24	-8.81	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.72	7.35	-11.32	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.83	6.23	-11.41	4.79	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.18	-11.38	7.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.64	6.81	HS 72.89	131.2
HS20	6.07	11.35	HS 121.48	218.7
2F1	9.99	18.98	0.00	149.8
3F1	7.77	16.09	0.00	178.7
4F1	7.71	19.00	0.00	208.2
5C1	7.73	12.89	0.00	309.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 15.5

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. 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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18	
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00
OPER	HS20	101.24 L	77.88	34.18	0.0	81.67	62.82	62.18	
		-30.72 R	-23.63	104.53	0.0	-27.30	-21.00	81.32	0.00
OPER	2F1	70.00 L	53.84	52.18	0.0	0.00	0.00	0.00	
		-20.65 R	-15.89	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.57 L	68.13	52.18	0.0	0.00	0.00	0.00	
		-29.63 R	-22.79	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.60 L	72.77	48.18	0.0	0.00	0.00	0.00	
		-31.89 R	-24.53	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.27 L	68.67	50.18	0.0	0.00	0.00	0.00	
		-37.28 R	-28.68	90.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.79	1.56	5.79	HS 31.12	56.0
HS20	2.59	9.64	2.59	9.64	HS 51.86	93.3
2F1	3.75	14.35	3.75	14.35	0.00	56.3
3F1	2.96	10.00	2.96	10.00	0.00	68.2
4F1	2.78	9.29	2.78	9.29	0.00	74.9

5C1	2.94	7.95	2.94	7.95	0.00	117.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 0.8
Superimposed Dead Load Moment 9.2

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	174.4	-167.2	155.2	-186.4
OPER	300.6C	-268.7	268.7	-300.6C	290.7	-278.6	258.7	-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	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58			
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00		
OPER	HS20	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58			
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00		
OPER	2F1	59.69 L	45.91	54.58	0.0	0.00	0.00	0.00			
		-25.96 R	-19.97	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.16 L	57.82	50.58	0.0	0.00	0.00	0.00			
		-37.24 R	-28.65	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.44 L	58.80	50.58	0.0	0.00	0.00	0.00			
		-40.07 R	-30.82	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.61 R	60.47	111.58	0.0	0.00	0.00	0.00			
		-39.25 R	-30.19	92.53	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	1.92	4.33	1.71	4.83	HS 34.27	61.7
HS20	3.21	7.22	2.86	8.05	HS 57.11	102.8
2F1	4.87	10.73	4.33	11.97	0.00	65.0
3F1	3.87	7.48	3.44	8.34	0.00	79.2
4F1	3.80	6.95	3.38	7.75	0.00	91.4
5C1	3.70	7.10	3.29	7.91	0.00	131.6

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	-3.5	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	-22.60	5.50	-17.38	4.23	-19.92	7.36	-15.32	5.66
OPER	HS20	-22.60	5.50	-17.38	4.23	-19.92	7.36	-15.32	5.66
OPER	2F1	-14.16	3.96	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.72	4.23	-14.40	3.25	0.00	0.00	0.00	0.00
OPER	4F1	-19.27	3.46	-14.82	2.66	0.00	0.00	0.00	0.00
OPER	5C1	-17.81	6.90	-13.70	5.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.99	9.80	HS 59.78	107.6
HS20	4.98	16.33	HS 99.64	179.3
2F1	7.95	30.35	0.00	119.2
3F1	6.01	28.42	0.00	138.3
4F1	5.84	34.73	0.00	157.8
5C1	6.32	17.41	0.00	252.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

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. 173.6	171.6	-163.7	171.6	-163.7	161.7	-173.6	161.7	-
OPER 289.4	279.4	-279.4	279.4	-279.4	269.4	-289.4	269.4	-

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	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00
OPER	HS20	90.59 L	69.69	36.58	0.0	68.64	52.80	64.58	
		-38.61 R	-29.70	104.53	0.0	-31.24	-24.03	81.32	0.00
OPER	2F1	59.69 L	45.91	54.58	0.0	0.00	0.00	0.00	
		-25.96 R	-19.97	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.16 L	57.82	50.58	0.0	0.00	0.00	0.00	
		-37.24 R	-28.65	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.44 L	58.80	50.58	0.0	0.00	0.00	0.00	
		-40.07 R	-30.82	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.61 R	60.47	111.58	0.0	0.00	0.00	0.00	
		-39.25 R	-30.19	92.53	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.50	1.78	4.50	HS 35.69	64.2
HS20	2.97	7.49	2.97	7.49	HS 59.48	107.1
2F1	4.51	11.15	4.51	11.15	0.00	67.7
3F1	3.59	7.77	3.59	7.77	0.00	82.4
4F1	3.53	7.22	3.53	7.22	0.00	95.2

5C1	3.43	7.37	3.43	7.37	0.00	137.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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. 3.800
 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	161.9	-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	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97			
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15		
OPER	HS20	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97			
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15		
OPER	2F1	40.63 L	31.26	56.97	0.0	0.00	0.00	0.00			
		-31.26 R	-24.05	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.05 L	37.73	52.97	0.0	0.00	0.00	0.00			
		-44.85 R	-34.50	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.92 L	34.55	48.97	0.0	0.00	0.00	0.00			
		-48.26 R	-37.12	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.74 R	45.18	113.97	0.0	0.00	0.00	0.00			
		-41.74 R	-32.11	93.32	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	2.88	3.45	2.58	3.86	HS 51.56	92.8
HS20	4.81	5.75	4.30	6.44	HS 85.93	154.7
2F1	7.43	8.55	6.64	9.58	0.00	99.6
3F1	6.15	5.96	5.50	6.68	0.00	126.6
4F1	6.72	5.54	6.01	6.20	0.00	149.6
5C1	5.14	6.41	4.59	7.17	0.00	183.8

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	-5.1	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	-27.59	3.19	-21.22	2.45	-23.15	4.84	-17.81	3.72
OPER	HS20	-27.59	3.19	-21.22	2.45	-23.15	4.84	-17.81	3.72
OPER	2F1	-16.81	2.26	-12.93	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-22.74	3.24	-17.49	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.46	3.46	-18.05	2.66	0.00	0.00	0.00	0.00
OPER	5C1	-21.40	4.92	-16.47	3.78	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.41	15.12	HS 48.19	86.7
HS20	4.02	25.20	HS 80.32	144.6
2F1	6.59	54.03	0.00	98.9
3F1	4.87	37.67	0.00	112.0
4F1	4.72	35.25	0.00	127.5
5C1	5.18	24.80	0.00	207.0

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 -1.1

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	167.1	-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	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97	
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15
OPER	HS20	62.82 L	48.32	38.97	0.0	47.60	36.62	66.97	
		-46.50 R	-35.77	104.53	0.0	-37.14	-28.57	81.32	129.15
OPER	2F1	40.63 L	31.26	56.97	0.0	0.00	0.00	0.00	
		-31.26 R	-24.05	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.05 L	37.73	52.97	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.92 L	34.55	48.97	0.0	0.00	0.00	0.00	
		-48.26 R	-37.12	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.74 R	45.18	113.97	0.0	0.00	0.00	0.00	
		-41.74 R	-32.11	93.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.61	96.5
HS20	4.47	5.98	4.47	5.98	HS 89.35	160.8
2F1	6.91	8.90	6.91	8.90	0.00	103.6
3F1	5.72	6.20	5.72	6.20	0.00	131.6
4F1	6.25	5.76	6.25	5.76	0.00	155.6

5C1	4.78	6.66	4.78	6.66	0.00	191.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-15.4

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	190.4	-151.1	171.3	-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	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36			
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79		
OPER	HS20	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36			
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79		
OPER	2F1	14.35 L	11.04	59.36	0.0	0.00	0.00	0.00			
		-36.56 R	-28.13	88.93	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.06 R	10.81	115.23	0.0	0.00	0.00	0.00			
		-52.46 R	-40.35	91.32	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.94 R	11.50	119.23	0.0	0.00	0.00	0.00			
		-56.45 R	-43.42	94.53	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.85 R	22.96	116.36	0.0	0.00	0.00	0.00			
		-46.15 R	-35.50	95.71	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	7.23	2.48	6.50	2.80	HS 49.69	89.4
HS20	12.04	4.14	10.83	4.67	HS 82.82	149.1
2F1	22.12	6.89	19.89	7.76	0.00	103.3
3F1	22.58	4.80	20.31	5.41	0.00	110.4
4F1	21.24	4.46	19.10	5.03	0.00	120.5
5C1	10.63	5.46	9.56	6.15	0.00	218.3

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
-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	-109.0	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	-32.76	3.33	-25.20	2.56	-26.23	3.50	-20.17	2.69
OPER	HS20	-32.76	3.33	-25.20	2.56	-26.23	3.50	-20.17	2.69
OPER	2F1	-19.28	2.26	-14.83	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-26.62	3.24	-20.48	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-27.43	3.48	-21.10	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-25.02	3.27	-19.25	2.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	21.20	HS 39.92	71.9
HS20	3.33	35.33	HS 66.54	119.8
2F1	5.65	54.83	0.00	84.8
3F1	4.09	38.23	0.00	94.2
4F1	3.97	35.54	0.00	107.3
5C1	4.36	37.81	0.00	174.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.4
Superimposed Dead Load Moment -15.4

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. 157.6	160.9	-174.3	160.9	-174.3	177.7	-157.6	177.7	-
OPER 262.6	279.4	-279.4	279.4	-279.4	296.2	-262.6	296.2	-

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	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36	
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79
OPER	HS20	18.14 L	13.96	41.36	0.0	26.36	20.27	69.36	
		-60.83 L	-46.79	62.53	0.0	-56.80	-43.69	81.32	59.79
OPER	2F1	14.35 L	11.04	59.36	0.0	0.00	0.00	0.00	
		-36.56 R	-28.13	88.93	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.06 R	10.81	115.23	0.0	0.00	0.00	0.00	
		-52.46 R	-40.35	91.32	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.94 R	11.50	119.23	0.0	0.00	0.00	0.00	
		-56.45 R	-43.42	94.53	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.85 R	22.96	116.36	0.0	0.00	0.00	0.00	
		-46.15 R	-35.50	95.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.74	2.59	6.74	2.59	HS 51.81	93.3
HS20	11.24	4.32	11.24	4.32	HS 86.35	155.4
2F1	20.64	7.18	20.64	7.18	0.00	107.7
3F1	21.07	5.01	21.07	5.01	0.00	115.2
4F1	19.82	4.65	19.82	4.65	0.00	125.6

5C1	9.92	5.69	9.92	5.69	0.00	227.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 -3.0
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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00			
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00			
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00			
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00			
		-66.52 L	-51.17	66.93	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	11.78	1.32	10.66	1.50	HS 26.34	47.4
HS20	19.63	2.19	17.76	2.50	HS 43.90	79.0
2F1	29.56	5.53	26.75	6.30	0.00	83.0
3F1	20.61	3.39	18.65	3.86	0.00	78.0
4F1	19.16	2.91	17.34	3.31	0.00	78.5
5C1	24.05	3.49	21.76	3.97	0.00	139.6

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.8	0.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.3	64.4
OPER	151.3	-107.2	107.3

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	-32.76	37.61	-25.20	28.93	-26.23	29.00	-20.17	22.31
OPER	HS20	-32.76	37.61	-25.20	28.93	-26.23	29.00	-20.17	22.31
OPER	2F1	-19.28	21.47	-14.83	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.62	30.18	-20.48	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.43	31.72	-21.10	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-25.02	28.44	-19.25	21.88	0.00	0.00	0.00	0.00

Rating	Shear			
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.71	1.71	HS 34.19	61.5
HS20	2.85	2.85	HS 56.98	102.6
2F1	4.99	5.00	0.00	74.9
3F1	3.55	3.56	0.00	81.7
4F1	3.38	3.38	0.00	91.2
5C1	3.77	3.77	0.00	150.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.0
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. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00	
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00	
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00	
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00	
		-66.52 L	-51.17	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.38	11.03	1.38	HS 27.56	49.6
HS20	18.39	2.30	18.39	2.30	HS 45.94	82.7
2F1	27.70	5.79	27.70	5.79	0.00	86.9
3F1	19.31	3.55	19.31	3.55	0.00	81.6
4F1	17.95	3.04	17.95	3.04	0.00	82.2

5C1	22.53	3.65	22.53	3.65	0.00	146.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.140

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	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 -3.0
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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27			
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32		
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00			
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00			
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00			
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00			
		-66.52 L	-51.17	66.93	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	11.78	1.32	10.66	1.50	HS 26.34	47.4
HS20	19.63	2.19	17.76	2.50	HS 43.90	79.0
2F1	29.56	5.53	26.75	6.30	0.00	83.0
3F1	20.61	3.39	18.65	3.86	0.00	78.0
4F1	19.16	2.91	17.34	3.31	0.00	78.5
5C1	24.05	3.49	21.76	3.97	0.00	139.6

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.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-8.4	8.3

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.3	64.4
OPER	151.3	-107.2	107.3

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	-37.62	37.61	-28.94	28.93	-29.03	29.00	-22.33	22.31
OPER	HS20	-37.62	37.61	-28.94	28.93	-29.03	29.00	-22.33	22.31
OPER	2F1	-21.47	21.47	-16.52	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.19	30.18	-23.22	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.73	31.72	-24.41	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-28.47	28.44	-21.90	21.88	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.71	1.71	HS 34.19	61.5
HS20	2.85	2.85	HS 56.98	102.6
2F1	4.99	5.00	0.00	74.9
3F1	3.55	3.56	0.00	81.7
4F1	3.38	3.38	0.00	91.2
5C1	3.77	3.77	0.00	150.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.0
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. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

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	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	HS20	16.84 L	12.95	15.05	0.0	17.18	13.22	38.27	
		-105.72 L	-81.33	50.93	0.0	-95.14	-73.18	62.18	81.32
OPER	2F1	11.41 L	8.78	30.66	0.0	0.00	0.00	0.00	
		-41.93 L	-32.26	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 L	12.59	28.27	0.0	0.00	0.00	0.00	
		-68.42 R	-52.63	76.53	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 L	13.54	25.05	0.0	0.00	0.00	0.00	
		-79.78 R	-61.37	76.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.02 R	10.79	154.63	0.0	0.00	0.00	0.00	
		-66.52 L	-51.17	66.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.38	11.03	1.38	HS 27.56	49.6
HS20	18.39	2.30	18.39	2.30	HS 45.94	82.7
2F1	27.70	5.79	27.70	5.79	0.00	86.9
3F1	19.31	3.55	19.31	3.55	0.00	81.6
4F1	17.95	3.04	17.95	3.04	0.00	82.2

5C1	22.53	3.65	22.53	3.65	0.00	146.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.200

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 -1.4
Superimposed Dead Load Moment -15.6

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	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.7

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	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14			
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71		
OPER	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14			
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71		
OPER	2F1	14.38 R	11.06	84.14	0.0	0.00	0.00	0.00			
		-36.62 L	-28.17	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.29 L	10.99	28.27	0.0	0.00	0.00	0.00			
		-52.53 L	-40.41	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.19 L	11.68	24.27	0.0	0.00	0.00	0.00			
		-56.52 L	-43.48	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	30.08 L	23.14	27.14	0.0	0.00	0.00	0.00			
		-46.23 L	-35.56	47.79	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	7.13	2.48	6.41	2.79	HS 49.58	89.3
HS20	11.89	4.13	10.69	4.66	HS 82.64	148.8
2F1	22.09	6.87	19.87	7.75	0.00	103.1
3F1	22.23	4.79	19.99	5.40	0.00	110.2
4F1	20.91	4.45	18.81	5.02	0.00	120.2
5C1	10.56	5.44	9.50	6.14	0.00	217.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.7

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	-3.17	32.74	-2.44	25.19	-3.50	26.19	-2.69	20.15
OPER	HS20	-3.17	32.74	-2.44	25.19	-3.50	26.19	-2.69	20.15
OPER	2F1	-2.22	19.28	-1.71	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	26.61	-2.45	20.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	27.41	-2.62	21.09	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	25.00	-2.49	19.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.19	2.00	HS 39.98	72.0
HS20	35.32	3.33	HS 66.63	119.9
2F1	55.69	5.66	0.00	84.9
3F1	38.82	4.10	0.00	94.3
4F1	36.31	3.98	0.00	107.4
5C1	38.27	4.36	0.00	174.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.4
Superimposed Dead Load Moment -15.6

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. 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 w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14	
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71
OPER	HS20	18.19 R	13.99	102.14	0.0	26.72	20.56	74.14	
		-60.91 R	-46.85	80.97	0.0	-56.91	-43.78	62.18	83.71
OPER	2F1	14.38 R	11.06	84.14	0.0	0.00	0.00	0.00	
		-36.62 L	-28.17	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.29 L	10.99	28.27	0.0	0.00	0.00	0.00	
		-52.53 L	-40.41	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.19 L	11.68	24.27	0.0	0.00	0.00	0.00	
		-56.52 L	-43.48	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	30.08 L	23.14	27.14	0.0	0.00	0.00	0.00	
		-46.23 L	-35.56	47.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.66	2.59	6.66	2.59	HS 51.70	93.1
HS20	11.09	4.31	11.09	4.31	HS 86.17	155.1
2F1	20.62	7.17	20.62	7.17	0.00	107.5
3F1	20.74	4.99	20.74	4.99	0.00	114.9
4F1	19.51	4.64	19.51	4.64	0.00	125.3

5C1 9.85 5.68 9.85 5.68 0.00 227.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.200

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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. 4.200
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 +bend	top fiber -bend	bottom fiber +bend	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	270.4	-298.9

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	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53			
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35		
OPER	HS20	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53			
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35		
OPER	2F1	40.65 R	31.27	86.53	0.0	0.00	0.00	0.00			
		-31.30 L	-24.08	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.07 R	37.75	90.53	0.0	0.00	0.00	0.00			
		-44.90 L	-34.54	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.94 R	34.57	94.53	0.0	0.00	0.00	0.00			
		-48.32 L	-37.17	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.90 L	45.31	29.53	0.0	0.00	0.00	0.00			
		-41.79 L	-32.15	50.18	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	2.89	3.44	2.58	3.86	HS 51.63	92.9
HS20	4.81	5.74	4.30	6.43	HS 86.05	154.9
2F1	7.44	8.53	6.65	9.55	0.00	99.8
3F1	6.16	5.95	5.51	6.66	0.00	126.7
4F1	6.73	5.53	6.02	6.19	0.00	149.2
5C1	5.13	6.39	4.59	7.15	0.00	183.6

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.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.1	66.5
OPER	151.3	-121.9	110.9

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	-3.17	27.57	-2.44	21.21	-4.88	23.12	-3.75	17.78
OPER	HS20	-3.17	27.57	-2.44	21.21	-4.88	23.12	-3.75	17.78
OPER	2F1	-2.22	16.80	-1.71	12.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	22.73	-2.45	17.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	23.45	-2.62	18.04	0.00	0.00	0.00	0.00
OPER	5C1	-4.89	21.39	-3.76	16.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	2.41	HS 48.26	86.9
HS20	24.97	4.02	HS 80.43	144.8
2F1	54.88	6.60	0.00	99.0
3F1	38.26	4.88	0.00	112.2
4F1	35.78	4.73	0.00	127.6
5C1	24.92	5.18	0.00	207.4

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 -1.5

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. 166.6	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
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 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	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53	
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35
OPER	HS20	62.84 R	48.34	104.53	0.0	46.93	36.10	76.53	
		-46.53 L	-35.79	38.97	0.0	-37.66	-28.97	62.18	14.35
OPER	2F1	40.65 R	31.27	86.53	0.0	0.00	0.00	0.00	
		-31.30 L	-24.08	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.07 R	37.75	90.53	0.0	0.00	0.00	0.00	
		-44.90 L	-34.54	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.94 R	34.57	94.53	0.0	0.00	0.00	0.00	
		-48.32 L	-37.17	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.90 L	45.31	29.53	0.0	0.00	0.00	0.00	
		-41.79 L	-32.15	50.18	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.58	2.68	3.58	HS 53.68	96.6
HS20	4.47	5.97	4.47	5.97	HS 89.47	161.0
2F1	6.92	8.87	6.92	8.87	0.00	103.7
3F1	5.73	6.18	5.73	6.18	0.00	131.7
4F1	6.26	5.75	6.26	5.75	0.00	155.2

5C1	4.77	6.64	4.77	6.64	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.200

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 8.6

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	174.8	-166.8	155.6	-186.0
OPER	300.6C	-268.7	268.7	-300.6C	291.3	-277.9	259.4	-309.9

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 Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93		
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00	
OPER	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93		
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00	
OPER	2F1	59.68 R	45.91	88.93	0.0	0.00	0.00	0.00		
		-25.98 L	-19.99	54.58	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	75.15 R	57.80	92.93	0.0	0.00	0.00	0.00		
		-37.27 L	-28.67	52.18	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	76.43 R	58.79	92.93	0.0	0.00	0.00	0.00		
		-40.11 L	-30.85	48.97	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	78.69 L	60.53	31.93	0.0	0.00	0.00	0.00		
		-39.23 L	-30.18	50.97	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	1.93	4.32	1.72	4.82	HS 34.35	61.8
HS20	3.22	7.20	2.86	8.02	HS 57.26	103.1
2F1	4.88	10.70	4.35	11.93	0.00	65.2
3F1	3.88	7.46	3.45	8.31	0.00	79.4
4F1	3.81	6.93	3.39	7.73	0.00	91.6
5C1	3.70	7.08	3.30	7.90	0.00	131.8

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.	4.300		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	-5.50	22.59	-4.23	17.38	-7.40	19.88	-5.69	15.29
OPER	HS20	-5.50	22.59	-4.23	17.38	-7.40	19.88	-5.69	15.29
OPER	2F1	-3.97	14.15	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.70	-3.26	14.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	19.25	-2.62	14.81	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.80	-5.30	13.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.74	2.99	HS 59.85	107.7
HS20	16.23	4.99	HS 99.74	179.5
2F1	30.28	7.96	0.00	119.4
3F1	28.36	6.02	0.00	138.6
4F1	35.26	5.85	0.00	158.0
5C1	17.41	6.33	0.00	253.1

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.	4.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.7	8.6

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. 173.2	171.4	-163.9	171.4	-163.9	162.1	-173.2	162.1	-
OPER 288.7	279.4	-279.4	279.4	-279.4	270.1	-288.7	270.1	-

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	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00
OPER	HS20	90.60 R	69.69	106.93	0.0	68.40	52.62	78.93	
		-38.62 L	-29.71	38.97	0.0	-31.49	-24.22	62.18	0.00
OPER	2F1	59.68 R	45.91	88.93	0.0	0.00	0.00	0.00	
		-25.98 L	-19.99	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.15 R	57.80	92.93	0.0	0.00	0.00	0.00	
		-37.27 L	-28.67	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.43 R	58.79	92.93	0.0	0.00	0.00	0.00	
		-40.11 L	-30.85	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.69 L	60.53	31.93	0.0	0.00	0.00	0.00	
		-39.23 L	-30.18	50.97	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.49	1.79	4.49	HS 35.78	64.4
HS20	2.98	7.47	2.98	7.47	HS 59.63	107.3
2F1	4.53	11.11	4.53	11.11	0.00	67.9
3F1	3.59	7.74	3.59	7.74	0.00	82.7
4F1	3.53	7.20	3.53	7.20	0.00	95.4

5C1	3.43	7.36	3.43	7.36	0.00	137.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.200

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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. 4.400
 HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.3
 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	170.8	-170.8	151.6	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.6	-284.7	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	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32			
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00		
OPER	HS20	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32			
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00		
OPER	2F1	69.96 R	53.81	91.32	0.0	0.00	0.00	0.00			
		-20.67 L	-15.90	54.58	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 R	68.09	91.32	0.0	0.00	0.00	0.00			
		-29.65 L	-22.81	52.18	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.55 R	72.73	95.32	0.0	0.00	0.00	0.00			
		-31.90 L	-24.54	48.97	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.26 R	68.67	93.32	0.0	0.00	0.00	0.00			
		-37.30 L	-28.69	51.84	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	1.69	5.56	1.50	6.18	HS 29.94	53.9
HS20	2.81	9.27	2.49	10.31	HS 49.91	89.8
2F1	4.07	13.77	3.61	15.32	0.00	54.2
3F1	3.21	9.60	2.85	10.68	0.00	65.6
4F1	3.01	8.92	2.67	9.93	0.00	72.2
5C1	3.19	7.63	2.83	8.49	0.00	113.2

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 (-)	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	-10.43	18.82	-8.02	14.48	-10.24	16.59	-7.88	12.76
OPER	HS20	-10.43	18.82	-8.02	14.48	-10.24	16.59	-7.88	12.76
OPER	2F1	-6.25	11.44	-4.80	8.80	0.00	0.00	0.00	0.00
OPER	3F1	-7.36	14.70	-5.66	11.31	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.81	-4.80	11.40	0.00	0.00	0.00	0.00
OPER	5C1	-9.20	14.80	-7.08	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.80	3.65	HS 72.97	131.4
HS20	11.34	6.08	HS 121.62	218.9
2F1	18.94	10.01	0.00	150.1
3F1	16.06	7.78	0.00	179.1
4F1	18.96	7.73	0.00	208.6
5C1	12.85	7.74	0.00	309.4

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 1.3
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. 177.2	174.0	-161.2	174.0	-161.2	158.0	-177.2	158.0	-
OPER 295.4	279.4	-279.4	279.4	-279.4	263.4	-295.4	263.4	-

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	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32	
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00
OPER	HS20	101.25 R	77.89	109.32	0.0	81.33	62.56	81.32	
		-30.72 L	-23.63	38.97	0.0	-27.62	-21.24	62.18	0.00
OPER	2F1	69.96 R	53.81	91.32	0.0	0.00	0.00	0.00	
		-20.67 L	-15.90	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.52 R	68.09	91.32	0.0	0.00	0.00	0.00	
		-29.65 L	-22.81	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.55 R	72.73	95.32	0.0	0.00	0.00	0.00	
		-31.90 L	-24.54	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.26 R	68.67	93.32	0.0	0.00	0.00	0.00	
		-37.30 L	-28.69	51.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.77	1.56	5.77	HS 31.22	56.2
HS20	2.60	9.62	2.60	9.62	HS 52.03	93.7
2F1	3.77	14.29	3.77	14.29	0.00	56.5
3F1	2.98	9.96	2.98	9.96	0.00	68.4
4F1	2.79	9.26	2.79	9.26	0.00	75.2

5C1	2.95	7.92	2.95	7.92	0.00	118.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.200

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.09		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	11.96	1.00	33000.	73.86	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.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.5	16.9

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	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	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71			
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18		0.00	
OPER	HS20	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71			
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18		0.00	
OPER	2F1	71.01 L	54.63	73.71	0.0	0.00	0.00	0.00			
		-15.35 L	-11.81	54.58	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.09 R	72.37	93.71	0.0	0.00	0.00	0.00			
		-22.02 L	-16.94	52.18	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	97.73 R	75.17	97.71	0.0	0.00	0.00	0.00			
		-23.69 L	-18.23	48.97	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	92.36 L	71.05	32.71	0.0	0.00	0.00	0.00			
		-36.58 L	-28.14	53.45	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	1.73	7.25	1.54	8.06	HS 30.72	55.3
HS20	2.89	12.09	2.56	13.44	HS 51.20	92.2
2F1	3.97	18.70	3.52	20.79	0.00	52.9
3F1	3.00	13.04	2.66	14.49	0.00	61.2
4F1	2.89	12.12	2.56	13.47	0.00	69.1
5C1	3.06	7.85	2.71	8.72	0.00	108.4

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.	4.500		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	-116.5	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	-14.89	14.89	-11.46	11.46	-13.33	13.36	-10.25	10.28
OPER	HS20	-14.89	14.89	-11.46	11.46	-13.33	13.36	-10.25	10.28
OPER	2F1	-8.77	8.77	-6.74	6.74	0.00	0.00	0.00	0.00
OPER	3F1	-10.89	10.88	-8.37	8.37	0.00	0.00	0.00	0.00
OPER	4F1	-10.28	10.28	-7.91	7.91	0.00	0.00	0.00	0.00
OPER	5C1	-11.76	11.76	-9.05	9.05	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.68	HS 93.68	168.6
HS20	7.82	7.81	HS 156.13	281.0
2F1	13.29	13.26	0.00	198.9
3F1	10.70	10.68	0.00	245.7
4F1	11.33	11.31	0.00	305.4
5C1	9.90	9.89	0.00	395.5

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 1.5
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	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71	
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00
OPER	HS20	97.75 L	75.19	69.71	0.0	86.44	66.50	83.71	
		-22.82 L	-17.55	38.97	0.0	-23.74	-18.27	62.18	0.00
OPER	2F1	71.01 L	54.63	73.71	0.0	0.00	0.00	0.00	
		-15.35 L	-11.81	54.58	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.09 R	72.37	93.71	0.0	0.00	0.00	0.00	
		-22.02 L	-16.94	52.18	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.73 R	75.17	97.71	0.0	0.00	0.00	0.00	
		-23.69 L	-18.23	48.97	0.0	0.00	0.00	0.00	0.00
OPER	5C1	92.36 L	71.05	32.71	0.0	0.00	0.00	0.00	
		-36.58 L	-28.14	53.45	0.0	0.00	0.00	0.00	0.00

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	7.53	1.60	7.53	HS 32.04	57.7
HS20	2.67	12.54	2.67	12.54	HS 53.40	96.1
2F1	3.67	19.40	3.67	19.40	0.00	55.1
3F1	2.77	13.52	2.77	13.52	0.00	63.8
4F1	2.67	12.57	2.67	12.57	0.00	72.1

5C1	2.83	8.14	2.83	8.14	0.00	113.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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. 4.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.4	-284.9	252.4	-316.9

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	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10			
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00		
OPER	HS20	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10			
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00		
OPER	2F1	69.95 L	53.81	76.10	0.0	0.00	0.00	0.00			
		-20.64 R	-15.88	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 L	68.09	76.10	0.0	0.00	0.00	0.00			
		-29.62 R	-22.78	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.54 L	72.72	72.10	0.0	0.00	0.00	0.00			
		-31.87 R	-24.51	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.22 L	68.63	74.10	0.0	0.00	0.00	0.00			
		-37.15 R	-28.58	114.84	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	1.69	5.57	1.50	6.19	HS 29.92	53.9
HS20	2.81	9.28	2.49	10.32	HS 49.87	89.8
2F1	4.07	13.80	3.61	15.35	0.00	54.1
3F1	3.21	9.62	2.85	10.70	0.00	65.6
4F1	3.01	8.94	2.67	9.94	0.00	72.1
5C1	3.19	7.67	2.83	8.53	0.00	113.2

SHEAR 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 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	-18.82	10.43	-14.48	8.02	-16.56	10.27	-12.74	7.90
OPER	HS20	-18.82	10.43	-14.48	8.02	-16.56	10.27	-12.74	7.90
OPER	2F1	-11.44	6.24	-8.80	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.70	7.36	-11.31	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.82	6.24	-11.40	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.20	-11.38	7.08	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.80	HS 73.03	131.5
HS20	6.09	11.34	HS 121.72	219.1
2F1	10.01	18.93	0.00	150.2
3F1	7.79	16.05	0.00	179.2
4F1	7.73	18.94	0.00	208.8
5C1	7.74	12.84	0.00	309.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

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. 177.4	174.1	-161.2	174.1	-161.2	157.9	-177.4	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 Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10	
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00
OPER	HS20	101.24 L	77.88	58.10	0.0	81.41	62.62	86.10	
		-30.70 R	-23.62	128.45	0.0	-27.53	-21.17	105.23	0.00
OPER	2F1	69.95 L	53.81	76.10	0.0	0.00	0.00	0.00	
		-20.64 R	-15.88	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.52 L	68.09	76.10	0.0	0.00	0.00	0.00	
		-29.62 R	-22.78	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.54 L	72.72	72.10	0.0	0.00	0.00	0.00	
		-31.87 R	-24.51	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.22 L	68.63	74.10	0.0	0.00	0.00	0.00	
		-37.15 R	-28.58	114.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.78	1.56	5.78	HS 31.19	56.1
HS20	2.60	9.63	2.60	9.63	HS 51.99	93.6
2F1	3.76	14.32	3.76	14.32	0.00	56.4
3F1	2.97	9.98	2.97	9.98	0.00	68.4
4F1	2.78	9.28	2.78	9.28	0.00	75.2

5C1	2.95	7.96	2.95	7.96	0.00	118.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 9.0

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	-167.0	155.3	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	290.9	-278.4	258.9	-310.4

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	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49			
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00		
OPER	HS20	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49			
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00		
OPER	2F1	59.67 L	45.90	78.49	0.0	0.00	0.00	0.00			
		-25.95 R	-19.96	112.84	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.13 L	57.80	74.49	0.0	0.00	0.00	0.00			
		-37.23 R	-28.64	115.23	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.41 L	58.78	74.49	0.0	0.00	0.00	0.00			
		-40.07 R	-30.82	118.45	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.59 R	60.46	135.49	0.0	0.00	0.00	0.00			
		-39.20 R	-30.15	116.45	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	1.93	4.33	1.72	4.82	HS 34.30	61.7
HS20	3.21	7.21	2.86	8.04	HS 57.17	102.9
2F1	4.88	10.73	4.34	11.96	0.00	65.1
3F1	3.87	7.48	3.45	8.34	0.00	79.3
4F1	3.81	6.95	3.39	7.75	0.00	91.5
5C1	3.70	7.10	3.29	7.92	0.00	131.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

4.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.3	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	-22.59	5.50	-17.38	4.23	-19.85	7.43	-15.27	5.72
OPER	HS20	-22.59	5.50	-17.38	4.23	-19.85	7.43	-15.27	5.72
OPER	2F1	-14.15	3.96	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.70	4.23	-14.39	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.25	3.41	-14.81	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-17.80	6.90	-13.69	5.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.99	9.69	HS 59.90	107.8
HS20	4.99	16.15	HS 99.83	179.7
2F1	7.97	30.26	0.00	119.5
3F1	6.03	28.34	0.00	138.7
4F1	5.86	35.19	0.00	158.1
5C1	6.33	17.40	0.00	253.4

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 9.0

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	171.5	-163.7	171.5	-163.7	161.8	-173.5	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	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49	
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00
OPER	HS20	90.59 L	69.68	60.49	0.0	68.55	52.73	88.49	
		-38.60 R	-29.69	128.45	0.0	-31.32	-24.09	105.23	0.00
OPER	2F1	59.67 L	45.90	78.49	0.0	0.00	0.00	0.00	
		-25.95 R	-19.96	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.13 L	57.80	74.49	0.0	0.00	0.00	0.00	
		-37.23 R	-28.64	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.41 L	58.78	74.49	0.0	0.00	0.00	0.00	
		-40.07 R	-30.82	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.59 R	60.46	135.49	0.0	0.00	0.00	0.00	
		-39.20 R	-30.15	116.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.49	1.79	4.49	HS 35.72	64.3
HS20	2.98	7.49	2.98	7.49	HS 59.54	107.2
2F1	4.52	11.14	4.52	11.14	0.00	67.8
3F1	3.59	7.76	3.59	7.76	0.00	82.5
4F1	3.53	7.22	3.53	7.22	0.00	95.3

5C1	3.43	7.38	3.43	7.38	0.00	137.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 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	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88			
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07		
OPER	HS20	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88			
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07		
OPER	2F1	40.63 L	31.26	80.88	0.0	0.00	0.00	0.00	0.00		
		-31.26 R	-24.05	112.84	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	49.06 L	37.74	76.88	0.0	0.00	0.00	0.00	0.00		
		-44.85 R	-34.50	115.23	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.93 L	34.56	72.88	0.0	0.00	0.00	0.00	0.00		
		-48.26 R	-37.13	118.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.75 R	45.19	137.88	0.0	0.00	0.00	0.00	0.00		
		-41.75 R	-32.11	117.23	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	2.88	3.45	2.58	3.87	HS 51.51	92.7
HS20	4.80	5.76	4.29	6.44	HS 85.86	154.5
2F1	7.42	8.56	6.64	9.58	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.4
4F1	6.72	5.55	6.00	6.21	0.00	149.7
5C1	5.14	6.41	4.59	7.18	0.00	183.6

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
-0.4	-5.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.6	73.1
OPER	151.3	-111.0	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	-27.57	3.17	-21.21	2.44	-23.09	4.91	-17.76	3.78
OPER	HS20	-27.57	3.17	-21.21	2.44	-23.09	4.91	-17.76	3.78
OPER	2F1	-16.80	2.22	-12.93	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.73	3.19	-17.48	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.45	3.41	-18.04	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.39	4.89	-16.46	3.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.41	14.88	HS 48.30	86.9
HS20	4.03	24.79	HS 80.50	144.9
2F1	6.60	54.78	0.00	99.1
3F1	4.88	38.18	0.00	112.3
4F1	4.73	35.72	0.00	127.7
5C1	5.19	24.89	0.00	207.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800
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	
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	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88	
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07
OPER	HS20	62.82 L	48.33	62.88	0.0	47.68	36.68	90.88	
		-46.50 R	-35.77	128.45	0.0	-37.09	-28.53	105.23	153.07
OPER	2F1	40.63 L	31.26	80.88	0.0	0.00	0.00	0.00	
		-31.26 R	-24.05	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.06 L	37.74	76.88	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.93 L	34.56	72.88	0.0	0.00	0.00	0.00	
		-48.26 R	-37.13	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.75 R	45.19	137.88	0.0	0.00	0.00	0.00	
		-41.75 R	-32.11	117.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.57	96.4
HS20	4.46	5.99	4.46	5.99	HS 89.28	160.7
2F1	6.90	8.90	6.90	8.90	0.00	103.5
3F1	5.72	6.21	5.72	6.21	0.00	131.5
4F1	6.24	5.77	6.24	5.77	0.00	155.7

5C1	4.77	6.67	4.77	6.67	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 -1.3
Superimposed Dead Load Moment -14.8

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	190.0	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.8	-284.5

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	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28			
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71		
OPER	HS20	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28			
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71		
OPER	2F1	14.37 L	11.05	83.28	0.0	0.00	0.00	0.00	0.00		
		-36.57 R	-28.13	112.84	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.08 R	10.83	139.15	0.0	0.00	0.00	0.00	0.00		
		-52.47 R	-40.36	115.23	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.96 R	11.51	143.15	0.0	0.00	0.00	0.00	0.00		
		-56.46 R	-43.43	118.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.88 R	22.99	140.28	0.0	0.00	0.00	0.00	0.00		
		-46.17 R	-35.52	119.63	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	7.14	2.49	6.42	2.81	HS 49.82	89.7
HS20	11.91	4.15	10.71	4.68	HS 83.03	149.4
2F1	22.05	6.91	19.82	7.78	0.00	103.6
3F1	22.50	4.81	20.23	5.42	0.00	110.7
4F1	21.17	4.47	19.03	5.04	0.00	120.8
5C1	10.60	5.47	9.53	6.16	0.00	218.8

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.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.5	74.1
OPER	151.3	-109.2	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	-32.74	3.30	-25.19	2.54	-26.16	3.54	-20.12	2.72
OPER	HS20	-32.74	3.30	-25.19	2.54	-26.16	3.54	-20.12	2.72
OPER	2F1	-19.28	2.22	-14.83	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	3.19	-20.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.42	3.43	-21.09	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-25.01	3.23	-19.24	2.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	20.97	HS 40.01	72.0
HS20	3.33	34.94	HS 66.68	120.0
2F1	5.66	55.58	0.00	85.0
3F1	4.10	38.74	0.00	94.4
4F1	3.98	36.01	0.00	107.5
5C1	4.37	38.21	0.00	174.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -14.8

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. 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	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28	
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71
OPER	HS20	18.17 L	13.98	65.28	0.0	26.60	20.46	93.28	
		-60.84 L	-46.80	86.45	0.0	-56.56	-43.51	105.23	83.71
OPER	2F1	14.37 L	11.05	83.28	0.0	0.00	0.00	0.00	
		-36.57 R	-28.13	112.84	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.08 R	10.83	139.15	0.0	0.00	0.00	0.00	
		-52.47 R	-40.36	115.23	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.96 R	11.51	143.15	0.0	0.00	0.00	0.00	
		-56.46 R	-43.43	118.45	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.88 R	22.99	140.28	0.0	0.00	0.00	0.00	
		-46.17 R	-35.52	119.63	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.67	2.60	6.67	2.60	HS 51.93	93.5
HS20	11.11	4.33	11.11	4.33	HS 86.56	155.8
2F1	20.57	7.20	20.57	7.20	0.00	108.0
3F1	21.00	5.02	21.00	5.02	0.00	115.4
4F1	19.75	4.66	19.75	4.66	0.00	125.9

5C1	9.89	5.70	9.89	5.70	0.00	228.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 -2.9
Superimposed Dead Load Moment -32.5

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	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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00			
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00			
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00			
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00			
		-66.52 R	-51.17	100.49	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	11.55	1.32	10.45	1.50	HS 26.48	47.7
HS20	19.25	2.21	17.41	2.51	HS 44.13	79.4
2F1	29.91	5.57	27.07	6.33	0.00	83.5
3F1	20.85	3.41	18.87	3.88	0.00	78.4
4F1	19.38	2.92	17.53	3.33	0.00	79.0
5C1	23.85	3.51	21.58	3.99	0.00	140.2

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.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.4
OPER	151.3	-107.4	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	-32.74	37.61	-25.19	28.93	-26.16	28.97	-20.12	22.28
OPER	HS20	-32.74	37.61	-25.19	28.93	-26.16	28.97	-20.12	22.28
OPER	2F1	-19.28	21.47	-14.83	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	30.18	-20.47	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-27.42	31.72	-21.09	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-25.01	28.46	-19.24	21.89	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.26	61.7
HS20	2.86	2.86	HS 57.10	102.8
2F1	5.00	5.00	0.00	75.0
3F1	3.56	3.56	0.00	81.8
4F1	3.38	3.38	0.00	91.4
5C1	3.77	3.77	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -32.5

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. 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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00	
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00	
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00	
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00	
		-66.52 R	-51.17	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.82	1.38	10.82	1.38	HS 27.70	49.9
HS20	18.03	2.31	18.03	2.31	HS 46.16	83.1
2F1	28.02	5.82	28.02	5.82	0.00	87.4
3F1	19.53	3.57	19.53	3.57	0.00	82.1
4F1	18.15	3.06	18.15	3.06	0.00	82.6

5C1	22.34	3.67	22.34	3.67	0.00	146.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 -2.9
Superimposed Dead Load Moment -32.5

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	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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18			
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23		
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00			
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00			
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00			
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00			
		-66.52 R	-51.17	100.49	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	11.55	1.32	10.45	1.50	HS 26.48	47.7
HS20	19.25	2.21	17.41	2.51	HS 44.13	79.4
2F1	29.91	5.57	27.07	6.33	0.00	83.5
3F1	20.85	3.41	18.87	3.88	0.00	78.4
4F1	19.38	2.92	17.53	3.33	0.00	79.0
5C1	23.85	3.51	21.58	3.99	0.00	140.2

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.	5.000	2F1	2F1
		3F1	3F1
		4F1	4F1
		5C1	5C1

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

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.4	64.4
OPER	151.3	-107.4	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	-37.61	37.61	-28.93	28.93	-28.97	28.97	-22.28	22.28
OPER	HS20	-37.61	37.61	-28.93	28.93	-28.97	28.97	-22.28	22.28
OPER	2F1	-21.47	21.47	-16.51	16.51	0.00	0.00	0.00	0.00
OPER	3F1	-30.18	30.18	-23.21	23.21	0.00	0.00	0.00	0.00
OPER	4F1	-31.72	31.72	-24.40	24.40	0.00	0.00	0.00	0.00
OPER	5C1	-28.46	28.46	-21.89	21.89	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.71	1.71	HS 34.26	61.7
HS20	2.86	2.86	HS 57.10	102.8
2F1	5.00	5.00	0.00	75.0
3F1	3.56	3.56	0.00	81.8
4F1	3.38	3.38	0.00	91.4
5C1	3.77	3.77	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.9
Superimposed Dead Load Moment -32.5

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. 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	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	HS20	16.70 L	12.85	38.97	0.0	17.46	13.43	62.18	
		-105.69 R	-81.30	116.49	0.0	-94.74	-72.88	86.10	105.23
OPER	2F1	11.24 L	8.64	54.58	0.0	0.00	0.00	0.00	
		-41.89 L	-32.22	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.12 L	12.40	52.18	0.0	0.00	0.00	0.00	
		-68.38 R	-52.60	100.45	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.34 L	13.34	48.97	0.0	0.00	0.00	0.00	
		-79.72 R	-61.33	100.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.09 L	10.84	12.79	0.0	0.00	0.00	0.00	
		-66.52 R	-51.17	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.82	1.38	10.82	1.38	HS 27.70	49.9
HS20	18.03	2.31	18.03	2.31	HS 46.16	83.1
2F1	28.02	5.82	28.02	5.82	0.00	87.4
3F1	19.53	3.57	19.53	3.57	0.00	82.1
4F1	18.15	3.06	18.15	3.06	0.00	82.6

5C1	22.34	3.67	22.34	3.67	0.00	146.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 -1.3
Superimposed Dead Load Moment -14.8

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	190.0	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.8	-284.5

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	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06			
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63		
OPER	HS20	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06			
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63		
OPER	2F1	14.37 R	11.05	108.06	0.0	0.00	0.00	0.00			
		-36.58 L	-28.13	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.08 L	10.83	52.18	0.0	0.00	0.00	0.00			
		-52.47 L	-40.36	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.96 L	11.51	48.18	0.0	0.00	0.00	0.00			
		-56.46 L	-43.43	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	29.89 L	22.99	51.06	0.0	0.00	0.00	0.00			
		-46.17 L	-35.52	71.71	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	7.03	2.49	6.32	2.81	HS 49.82	89.7
HS20	11.72	4.15	10.53	4.68	HS 83.03	149.4
2F1	22.05	6.91	19.82	7.78	0.00	103.6
3F1	22.50	4.81	20.23	5.42	0.00	110.7
4F1	21.17	4.47	19.03	5.04	0.00	120.8
5C1	10.60	5.47	9.53	6.16	0.00	218.8

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.	5.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.6	0.0	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.1	65.5
OPER	151.3	-123.6	109.2

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	-3.17	32.74	-2.44	25.19	-3.54	26.16	-2.72	20.12
OPER	HS20	-3.17	32.74	-2.44	25.19	-3.54	26.16	-2.72	20.12
OPER	2F1	-2.22	19.28	-1.71	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	26.61	-2.45	20.47	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	27.42	-2.62	21.09	0.00	0.00	0.00	0.00
OPER	5C1	-3.23	25.01	-2.49	19.24	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.97	2.00	HS 40.01	72.0
HS20	34.94	3.33	HS 66.68	120.0
2F1	55.58	5.66	0.00	85.0
3F1	38.74	4.10	0.00	94.4
4F1	36.24	3.98	0.00	107.5
5C1	38.21	4.37	0.00	174.6

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 -1.3
Superimposed Dead Load Moment -14.8

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. 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 Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06	
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63
OPER	HS20	18.17 R	13.98	126.06	0.0	27.04	20.80	98.06	
		-60.84 R	-46.80	104.88	0.0	-56.59	-43.53	86.10	107.63
OPER	2F1	14.37 R	11.05	108.06	0.0	0.00	0.00	0.00	
		-36.58 L	-28.13	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.08 L	10.83	52.18	0.0	0.00	0.00	0.00	
		-52.47 L	-40.36	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.96 L	11.51	48.18	0.0	0.00	0.00	0.00	
		-56.46 L	-43.43	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.89 L	22.99	51.06	0.0	0.00	0.00	0.00	
		-46.17 L	-35.52	71.71	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.56	2.60	6.56	2.60	HS 51.93	93.5
HS20	10.93	4.33	10.93	4.33	HS 86.56	155.8
2F1	20.57	7.20	20.57	7.20	0.00	108.0
3F1	21.00	5.02	21.00	5.02	0.00	115.4
4F1	19.75	4.66	19.75	4.66	0.00	125.9

5C1 9.89 5.70 9.89 5.70 0.00 228.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 -0.9

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	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	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45			
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27		
OPER	HS20	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45			
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27		
OPER	2F1	40.64 R	31.26	110.45	0.0	0.00	0.00	0.00	0.00		
		-31.26 L	-24.05	78.49	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	49.06 R	37.74	114.45	0.0	0.00	0.00	0.00	0.00		
		-44.85 L	-34.50	76.10	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	44.93 R	34.56	118.45	0.0	0.00	0.00	0.00	0.00		
		-48.26 L	-37.13	72.88	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	58.75 L	45.19	53.45	0.0	0.00	0.00	0.00	0.00		
		-41.75 L	-32.11	74.10	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	2.88	3.45	2.58	3.87	HS 51.51	92.7
HS20	4.80	5.76	4.29	6.44	HS 85.86	154.5
2F1	7.42	8.56	6.64	9.58	0.00	99.6
3F1	6.15	5.97	5.50	6.68	0.00	126.4
4F1	6.72	5.55	6.00	6.21	0.00	149.7
5C1	5.14	6.41	4.59	7.18	0.00	183.6

SHEAR 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 Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	5.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.1	66.6
OPER	151.3	-121.8	111.0

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	-3.17	27.57	-2.44	21.21	-4.91	23.09	-3.78	17.76
OPER	HS20	-3.17	27.57	-2.44	21.21	-4.91	23.09	-3.78	17.76
OPER	2F1	-2.22	16.80	-1.71	12.93	0.00	0.00	0.00	0.00
OPER	3F1	-3.19	22.73	-2.45	17.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	23.45	-2.62	18.04	0.00	0.00	0.00	0.00
OPER	5C1	-4.89	21.39	-3.76	16.46	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.88	2.41	HS 48.30	86.9
HS20	24.79	4.03	HS 80.50	144.9
2F1	54.78	6.60	0.00	99.1
3F1	38.18	4.88	0.00	112.3
4F1	35.72	4.73	0.00	127.7
5C1	24.89	5.19	0.00	207.5

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 -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	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45	
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27
OPER	HS20	62.82 R	48.33	128.45	0.0	47.16	36.28	100.45	
		-46.50 L	-35.77	62.88	0.0	-37.09	-28.53	86.10	38.27
OPER	2F1	40.64 R	31.26	110.45	0.0	0.00	0.00	0.00	
		-31.26 L	-24.05	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.06 R	37.74	114.45	0.0	0.00	0.00	0.00	
		-44.85 L	-34.50	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.93 R	34.56	118.45	0.0	0.00	0.00	0.00	
		-48.26 L	-37.13	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.75 L	45.19	53.45	0.0	0.00	0.00	0.00	
		-41.75 L	-32.11	74.10	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.57	96.4
HS20	4.46	5.99	4.46	5.99	HS 89.28	160.7
2F1	6.90	8.90	6.90	8.90	0.00	103.5
3F1	5.72	6.21	5.72	6.21	0.00	131.5
4F1	6.24	5.77	6.24	5.77	0.00	155.7

5C1	4.77	6.67	4.77	6.67	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 0.8
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	-167.0	155.3	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	290.9	-278.4	258.9	-310.4

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	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84			
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00		
OPER	HS20	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84			
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00		
OPER	2F1	59.67 R	45.90	112.84	0.0	0.00	0.00	0.00			
		-25.95 L	-19.96	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.13 R	57.80	116.84	0.0	0.00	0.00	0.00			
		-37.23 L	-28.64	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.42 R	58.78	116.84	0.0	0.00	0.00	0.00			
		-40.07 L	-30.82	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.59 L	60.46	55.84	0.0	0.00	0.00	0.00			
		-39.20 L	-30.15	74.88	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	1.93	4.33	1.72	4.82	HS 34.30	61.7
HS20	3.21	7.21	2.86	8.04	HS 57.17	102.9
2F1	4.88	10.73	4.34	11.96	0.00	65.1
3F1	3.87	7.48	3.45	8.34	0.00	79.3
4F1	3.81	6.95	3.39	7.75	0.00	91.5
5C1	3.70	7.10	3.29	7.92	0.00	131.8

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.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.3	0.0	3.3

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	-5.50	22.59	-4.23	17.38	-7.43	19.85	-5.72	15.27
OPER	HS20	-5.50	22.59	-4.23	17.38	-7.43	19.85	-5.72	15.27
OPER	2F1	-3.96	14.15	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.70	-3.26	14.39	0.00	0.00	0.00	0.00
OPER	4F1	-3.41	19.25	-2.62	14.81	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.80	-5.30	13.69	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.69	2.99	HS 59.90	107.8
HS20	16.15	4.99	HS 99.83	179.7
2F1	30.26	7.97	0.00	119.5
3F1	28.34	6.03	0.00	138.7
4F1	35.19	5.86	0.00	158.1
5C1	17.40	6.33	0.00	253.4

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 0.8
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	171.5	-163.7	171.5	-163.7	161.8	-173.5	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	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84	
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00
OPER	HS20	90.59 R	69.68	130.84	0.0	68.55	52.73	102.84	
		-38.60 L	-29.69	62.88	0.0	-31.32	-24.09	86.10	0.00
OPER	2F1	59.67 R	45.90	112.84	0.0	0.00	0.00	0.00	
		-25.95 L	-19.96	78.49	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.13 R	57.80	116.84	0.0	0.00	0.00	0.00	
		-37.23 L	-28.64	76.10	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.42 R	58.78	116.84	0.0	0.00	0.00	0.00	
		-40.07 L	-30.82	72.88	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.59 L	60.46	55.84	0.0	0.00	0.00	0.00	
		-39.20 L	-30.15	74.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.49	1.79	4.49	HS 35.72	64.3
HS20	2.98	7.49	2.98	7.49	HS 59.54	107.2
2F1	4.52	11.14	4.52	11.14	0.00	67.8
3F1	3.59	7.76	3.59	7.76	0.00	82.5
4F1	3.53	7.22	3.53	7.22	0.00	95.3

5C1 3.43 7.38 3.43 7.38 0.00 137.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 1.3
Superimposed Dead Load Moment 14.9

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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.4	-284.9	252.4	-316.9

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	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23			
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10	0.00		
OPER	HS20	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23			
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10	0.00		
OPER	2F1	69.95 R	53.81	115.23	0.0	0.00	0.00	0.00			
		-20.64 L	-15.88	78.49	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 R	68.09	115.23	0.0	0.00	0.00	0.00			
		-29.62 L	-22.78	76.10	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.54 R	72.72	119.23	0.0	0.00	0.00	0.00			
		-31.87 L	-24.51	72.88	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.22 R	68.63	117.23	0.0	0.00	0.00	0.00			
		-37.28 L	-28.68	75.76	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	1.69	5.57	1.50	6.19	HS 29.92	53.9
HS20	2.81	9.28	2.49	10.32	HS 49.87	89.8
2F1	4.07	13.80	3.61	15.35	0.00	54.1
3F1	3.21	9.62	2.85	10.70	0.00	65.6
4F1	3.01	8.94	2.67	9.94	0.00	72.1
5C1	3.19	7.64	2.83	8.50	0.00	113.2

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.	5.400		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	-10.43	18.82	-8.02	14.48	-10.27	16.56	-7.90	12.74
OPER	HS20	-10.43	18.82	-8.02	14.48	-10.27	16.56	-7.90	12.74
OPER	2F1	-6.24	11.44	-4.80	8.80	0.00	0.00	0.00	0.00
OPER	3F1	-7.36	14.70	-5.66	11.31	0.00	0.00	0.00	0.00
OPER	4F1	-6.24	14.82	-4.80	11.40	0.00	0.00	0.00	0.00
OPER	5C1	-9.20	14.80	-7.08	11.38	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.80	3.65	HS 73.03	131.5
HS20	11.34	6.09	HS 121.72	219.1
2F1	18.93	10.01	0.00	150.2
3F1	16.05	7.79	0.00	179.2
4F1	18.94	7.73	0.00	208.8
5C1	12.84	7.74	0.00	309.6

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 1.3
Superimposed Dead Load Moment 14.9

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. 177.4	174.1	-161.2	174.1	-161.2	157.9	-177.4	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 Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10
OPER	HS20	101.24 R	77.88	133.23	0.0	81.41	62.62	105.23
		-30.70 L	-23.62	62.88	0.0	-27.53	-21.17	86.10
OPER	2F1	69.95 R	53.81	115.23	0.0	0.00	0.00	0.00
		-20.64 L	-15.88	78.49	0.0	0.00	0.00	0.00
OPER	3F1	88.52 R	68.09	115.23	0.0	0.00	0.00	0.00
		-29.62 L	-22.78	76.10	0.0	0.00	0.00	0.00
OPER	4F1	94.54 R	72.72	119.23	0.0	0.00	0.00	0.00
		-31.87 L	-24.51	72.88	0.0	0.00	0.00	0.00
OPER	5C1	89.22 R	68.63	117.23	0.0	0.00	0.00	0.00
		-37.28 L	-28.68	75.76	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	1.56	5.78	1.56	5.78	HS 31.19	56.1
HS20	2.60	9.63	2.60	9.63	HS 51.99	93.6
2F1	3.76	14.32	3.76	14.32	0.00	56.4
3F1	2.97	9.98	2.97	9.98	0.00	68.4
4F1	2.78	9.28	2.78	9.28	0.00	75.2

5C1	2.95	7.93	2.95	7.93	0.00	118.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.780

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.50		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	11.96	1.00	33000.	73.86	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 1.5
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	-172.2	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	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63			
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00		
OPER	HS20	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63			
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00		
OPER	2F1	71.01 R	54.63	117.63	0.0	0.00	0.00	0.00			
		-15.35 R	-11.81	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.09 L	72.37	97.63	0.0	0.00	0.00	0.00			
		-22.02 R	-16.94	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	97.73 L	75.17	93.63	0.0	0.00	0.00	0.00			
		-23.69 R	-18.23	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	92.36 R	71.05	158.63	0.0	0.00	0.00	0.00			
		-36.58 R	-28.14	137.88	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	7.25	1.54	8.06	HS 30.72	55.3
HS20	2.89	12.09	2.56	13.44	HS 51.20	92.2
2F1	3.97	18.70	3.52	20.79	0.00	52.9
3F1	3.00	13.04	2.66	14.49	0.00	61.2
4F1	2.89	12.12	2.56	13.47	0.00	69.1
5C1	3.06	7.85	2.71	8.72	0.00	108.4

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.	5.500		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 (-)	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	-14.89	14.89	-11.46	11.46	-13.36	13.33	-10.28	10.25
OPER	HS20	-14.89	14.89	-11.46	11.46	-13.36	13.33	-10.28	10.25
OPER	2F1	-8.77	8.77	-6.74	6.74	0.00	0.00	0.00	0.00
OPER	3F1	-10.88	10.89	-8.37	8.37	0.00	0.00	0.00	0.00
OPER	4F1	-10.28	10.28	-7.91	7.91	0.00	0.00	0.00	0.00
OPER	5C1	-11.76	11.76	-9.05	9.05	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.69	HS 93.75	168.8
HS20	7.82	7.81	HS 156.25	281.3
2F1	13.28	13.27	0.00	199.1
3F1	10.69	10.69	0.00	245.8
4F1	11.32	11.32	0.00	305.6
5C1	9.90	9.89	0.00	395.6

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 1.5
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 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	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63	
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00
OPER	HS20	97.75 R	75.19	121.63	0.0	86.44	66.50	107.63	
		-22.82 R	-17.55	152.37	0.0	-23.74	-18.27	129.15	0.00
OPER	2F1	71.01 R	54.63	117.63	0.0	0.00	0.00	0.00	
		-15.35 R	-11.81	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.09 L	72.37	97.63	0.0	0.00	0.00	0.00	
		-22.02 R	-16.94	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.73 L	75.17	93.63	0.0	0.00	0.00	0.00	
		-23.69 R	-18.23	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	92.36 R	71.05	158.63	0.0	0.00	0.00	0.00	
		-36.58 R	-28.14	137.88	0.0	0.00	0.00	0.00	0.00

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	7.53	1.60	7.53	HS 32.04	57.7
HS20	2.67	12.54	2.67	12.54	HS 53.40	96.1
2F1	3.67	19.40	3.67	19.40	0.00	55.1
3F1	2.77	13.52	2.77	13.52	0.00	63.8
4F1	2.67	12.57	2.67	12.57	0.00	72.1

5C1	2.83	8.14	2.83	8.14	0.00	113.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.525

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 1.3
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	170.8	-170.8	151.6	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.6	-284.7	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	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02			
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00		
OPER	HS20	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02			
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00		
OPER	2F1	69.96 L	53.81	100.02	0.0	0.00	0.00	0.00			
		-20.67 R	-15.90	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.52 L	68.09	100.02	0.0	0.00	0.00	0.00			
		-29.65 R	-22.81	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.55 L	72.73	96.02	0.0	0.00	0.00	0.00			
		-31.90 R	-24.54	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.26 L	68.67	98.02	0.0	0.00	0.00	0.00			
		-37.17 R	-28.59	138.76	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	1.69	5.56	1.50	6.18	HS 29.94	53.9
HS20	2.81	9.27	2.49	10.31	HS 49.91	89.8
2F1	4.07	13.77	3.61	15.32	0.00	54.2
3F1	3.21	9.60	2.85	10.68	0.00	65.6
4F1	3.01	8.92	2.67	9.93	0.00	72.2
5C1	3.19	7.66	2.83	8.52	0.00	113.2

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.	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	-114.5	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	-18.82	10.43	-14.48	8.02	-16.59	10.24	-12.76	7.88
OPER	HS20	-18.82	10.43	-14.48	8.02	-16.59	10.24	-12.76	7.88
OPER	2F1	-11.44	6.25	-8.80	4.80	0.00	0.00	0.00	0.00
OPER	3F1	-14.70	7.36	-11.31	5.66	0.00	0.00	0.00	0.00
OPER	4F1	-14.81	6.24	-11.40	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.80	9.20	-11.38	7.08	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.81	HS 72.97	131.4
HS20	6.08	11.34	HS 121.62	218.9
2F1	10.01	18.94	0.00	150.1
3F1	7.78	16.06	0.00	179.1
4F1	7.73	18.96	0.00	208.6
5C1	7.74	12.85	0.00	309.4

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 1.3
Superimposed Dead Load Moment 14.7

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. 177.2	174.0	-161.2	174.0	-161.2	158.0	-177.2	158.0	-
OPER 295.4	279.4	-279.4	279.4	-279.4	263.4	-295.4	263.4	-

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	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02	
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00
OPER	HS20	101.25 L	77.89	82.02	0.0	81.33	62.56	110.02	
		-30.72 R	-23.63	152.37	0.0	-27.62	-21.24	129.15	0.00
OPER	2F1	69.96 L	53.81	100.02	0.0	0.00	0.00	0.00	
		-20.67 R	-15.90	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.52 L	68.09	100.02	0.0	0.00	0.00	0.00	
		-29.65 R	-22.81	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.55 L	72.73	96.02	0.0	0.00	0.00	0.00	
		-31.90 R	-24.54	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.26 L	68.67	98.02	0.0	0.00	0.00	0.00	
		-37.17 R	-28.59	138.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.77	1.56	5.77	HS 31.22	56.2
HS20	2.60	9.62	2.60	9.62	HS 52.03	93.7
2F1	3.77	14.29	3.77	14.29	0.00	56.5
3F1	2.98	9.96	2.98	9.96	0.00	68.4
4F1	2.79	9.26	2.79	9.26	0.00	75.2

5C1	2.95	7.95	2.95	7.95	0.00	118.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.525

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 8.6

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	174.8	-166.8	155.6	-186.0
OPER	300.6C	-268.7	268.7	-300.6C	291.3	-277.9	259.4	-309.9

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	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41			
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00		
OPER	HS20	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41			
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00		
OPER	2F1	59.68 L	45.91	102.41	0.0	0.00	0.00	0.00			
		-25.98 R	-19.99	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.15 L	57.80	98.41	0.0	0.00	0.00	0.00			
		-37.27 R	-28.67	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.43 L	58.79	98.41	0.0	0.00	0.00	0.00			
		-40.11 R	-30.85	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.69 R	60.53	159.41	0.0	0.00	0.00	0.00			
		-39.23 R	-30.18	140.37	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	1.93	4.32	1.72	4.82	HS 34.35	61.8
HS20	3.22	7.20	2.86	8.02	HS 57.26	103.1
2F1	4.88	10.70	4.35	11.93	0.00	65.2
3F1	3.88	7.46	3.45	8.31	0.00	79.4
4F1	3.81	6.93	3.39	7.73	0.00	91.6
5C1	3.70	7.09	3.30	7.90	0.00	131.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.700

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed Dead Load Shear (-)	Dead Load Shear (+)	Dead Load Shear
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-0.3	-3.4		0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	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	-22.59	5.50	-17.38	4.23	-19.88	7.40	-15.29	5.69
OPER	HS20	-22.59	5.50	-17.38	4.23	-19.88	7.40	-15.29	5.69
OPER	2F1	-14.15	3.97	-10.89	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.70	4.23	-14.39	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.25	3.41	-14.81	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-17.80	6.90	-13.69	5.30	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.99	9.74	HS 59.85	107.7
HS20	4.99	16.23	HS 99.74	179.5
2F1	7.96	30.28	0.00	119.4
3F1	6.02	28.36	0.00	138.6
4F1	5.85	35.26	0.00	158.0
5C1	6.33	17.41	0.00	253.1

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 0.7
Superimposed Dead Load Moment 8.6

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. 173.2	171.4	-163.9	171.4	-163.9	162.1	-173.2	162.1	-
OPER 288.7	279.4	-279.4	279.4	-279.4	270.1	-288.7	270.1	-

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	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41	
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00
OPER	HS20	90.60 L	69.69	84.41	0.0	68.40	52.62	112.41	
		-38.62 R	-29.71	152.37	0.0	-31.49	-24.22	129.15	0.00
OPER	2F1	59.68 L	45.91	102.41	0.0	0.00	0.00	0.00	
		-25.98 R	-19.99	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.15 L	57.80	98.41	0.0	0.00	0.00	0.00	
		-37.27 R	-28.67	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.43 L	58.79	98.41	0.0	0.00	0.00	0.00	
		-40.11 R	-30.85	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.69 R	60.53	159.41	0.0	0.00	0.00	0.00	
		-39.23 R	-30.18	140.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.49	1.79	4.49	HS 35.78	64.4
HS20	2.98	7.47	2.98	7.47	HS 59.63	107.3
2F1	4.53	11.11	4.53	11.11	0.00	67.9
3F1	3.59	7.74	3.59	7.74	0.00	82.7
4F1	3.53	7.20	3.53	7.20	0.00	95.4

5C1	3.43	7.36	3.43	7.36	0.00	137.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.525

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 -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	270.4	-298.9

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	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80			
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98		
OPER	HS20	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80			
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98		
OPER	2F1	40.65 L	31.27	104.80	0.0	0.00	0.00	0.00			
		-31.30 R	-24.08	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.07 L	37.75	100.80	0.0	0.00	0.00	0.00			
		-44.90 R	-34.54	139.15	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.94 L	34.57	96.80	0.0	0.00	0.00	0.00			
		-48.32 R	-37.17	142.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.90 R	45.31	161.80	0.0	0.00	0.00	0.00			
		-41.79 R	-32.15	141.15	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	2.89	3.44	2.58	3.86	HS 51.63	92.9
HS20	4.81	5.74	4.30	6.43	HS 86.05	154.9
2F1	7.44	8.53	6.65	9.55	0.00	99.8
3F1	6.16	5.95	5.51	6.66	0.00	126.7
4F1	6.73	5.53	6.02	6.19	0.00	149.2
5C1	5.13	6.39	4.59	7.15	0.00	183.6

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
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-0.5	-5.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.1
OPER	151.3	-110.9	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	-27.57	3.17	-21.21	2.44	-23.12	4.88	-17.78	3.75
OPER	HS20	-27.57	3.17	-21.21	2.44	-23.12	4.88	-17.78	3.75
OPER	2F1	-16.80	2.22	-12.92	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.73	3.19	-17.48	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.45	3.41	-18.04	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.39	4.89	-16.45	3.76	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.41	14.98	HS 48.26	86.9
HS20	4.02	24.97	HS 80.43	144.8
2F1	6.60	54.88	0.00	99.0
3F1	4.88	38.26	0.00	112.2
4F1	4.73	35.78	0.00	127.6
5C1	5.18	24.92	0.00	207.4

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 -0.2
Superimposed Dead Load Moment -1.5

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. 166.6	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
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 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	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80	
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98
OPER	HS20	62.84 L	48.34	86.80	0.0	47.45	36.50	114.80	
		-46.53 R	-35.79	152.37	0.0	-37.67	-28.97	129.15	176.98
OPER	2F1	40.65 L	31.27	104.80	0.0	0.00	0.00	0.00	
		-31.30 R	-24.08	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.07 L	37.75	100.80	0.0	0.00	0.00	0.00	
		-44.90 R	-34.54	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.94 L	34.57	96.80	0.0	0.00	0.00	0.00	
		-48.32 R	-37.17	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.90 R	45.31	161.80	0.0	0.00	0.00	0.00	
		-41.79 R	-32.15	141.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.58	2.68	3.58	HS 53.68	96.6
HS20	4.47	5.97	4.47	5.97	HS 89.47	161.0
2F1	6.92	8.87	6.92	8.87	0.00	103.7
3F1	5.73	6.18	5.73	6.18	0.00	131.7
4F1	6.26	5.75	6.26	5.75	0.00	155.2

5C1	4.77	6.64	4.77	6.64	0.00	190.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.525

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-15.6

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	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.7

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	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19			
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15		107.63	
OPER	HS20	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19			
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15		107.63	
OPER	2F1	14.38 L	11.06	107.19	0.0	0.00	0.00	0.00		0.00	
		-36.62 R	-28.17	136.76	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.29 R	10.99	163.07	0.0	0.00	0.00	0.00		0.00	
		-52.53 R	-40.41	139.15	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	15.19 R	11.68	167.07	0.0	0.00	0.00	0.00		0.00	
		-56.52 R	-43.48	142.37	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	30.08 R	23.14	164.19	0.0	0.00	0.00	0.00		0.00	
		-46.23 R	-35.56	143.54	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	7.25	2.48	6.52	2.79	HS 49.58	89.3
HS20	12.08	4.13	10.87	4.66	HS 82.64	148.8
2F1	22.09	6.87	19.87	7.75	0.00	103.1
3F1	22.23	4.79	19.99	5.40	0.00	110.2
4F1	20.91	4.45	18.81	5.02	0.00	120.2
5C1	10.56	5.44	9.50	6.14	0.00	217.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

5.900

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.6	-6.7	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-32.74	3.30	-25.19	2.54	-26.19	3.50	-20.15	2.69
OPER	HS20	-32.74	3.30	-25.19	2.54	-26.19	3.50	-20.15	2.69
OPER	2F1	-19.28	2.22	-14.83	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	3.19	-20.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.41	3.43	-21.09	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-25.00	3.23	-19.23	2.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	21.19	HS 39.98	72.0
HS20	3.33	35.32	HS 66.63	119.9
2F1	5.66	55.69	0.00	84.9
3F1	4.10	38.82	0.00	94.3
4F1	3.98	36.08	0.00	107.4
5C1	4.36	38.27	0.00	174.5

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 -1.4
Superimposed Dead Load Moment -15.6

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. 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 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	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19	
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63
OPER	HS20	18.19 L	13.99	89.19	0.0	26.29	20.22	117.19	
		-60.91 L	-46.85	110.37	0.0	-56.89	-43.76	129.15	107.63
OPER	2F1	14.38 L	11.06	107.19	0.0	0.00	0.00	0.00	
		-36.62 R	-28.17	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.29 R	10.99	163.07	0.0	0.00	0.00	0.00	
		-52.53 R	-40.41	139.15	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.19 R	11.68	167.07	0.0	0.00	0.00	0.00	
		-56.52 R	-43.48	142.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	30.08 R	23.14	164.19	0.0	0.00	0.00	0.00	
		-46.23 R	-35.56	143.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.76	2.59	6.76	2.59	HS 51.70	93.1
HS20	11.28	4.31	11.28	4.31	HS 86.17	155.1
2F1	20.62	7.17	20.62	7.17	0.00	107.5
3F1	20.75	5.00	20.75	5.00	0.00	114.9
4F1	19.51	4.64	19.51	4.64	0.00	125.4

5C1	9.85	5.68	9.85	5.68	0.00	227.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.525

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 -3.0
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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02		
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02		
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00			
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00			
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00			
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00			
		-66.50 R	-51.15	124.37	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	11.78	1.32	10.66	1.50	HS 26.35	47.4
HS20	19.63	2.19	17.76	2.50	HS 43.91	79.0
2F1	29.56	5.53	26.75	6.30	0.00	83.0
3F1	20.61	3.39	18.65	3.86	0.00	78.1
4F1	19.16	2.91	17.34	3.31	0.00	78.5
5C1	25.06	3.49	22.68	3.97	0.00	139.6

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	-0.7	-6.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.3
OPER	151.3	-107.3	107.2

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	-32.74	37.62	-25.19	28.94	-26.19	29.03	-20.15	22.33
OPER	HS20	-32.74	37.62	-25.19	28.94	-26.19	29.03	-20.15	22.33
OPER	2F1	-19.28	21.47	-14.83	16.52	0.00	0.00	0.00	0.00
OPER	3F1	-26.61	30.19	-20.47	23.22	0.00	0.00	0.00	0.00
OPER	4F1	-27.41	31.73	-21.09	24.41	0.00	0.00	0.00	0.00
OPER	5C1	-25.00	28.47	-19.23	21.90	0.00	0.00	0.00	0.00

Rating Veh.	Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.19	61.5
HS20	2.85	2.85	HS 56.98	102.6
2F1	5.00	4.99	0.00	74.9
3F1	3.56	3.55	0.00	81.7
4F1	3.38	3.38	0.00	91.2
5C1	3.77	3.77	0.00	150.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.0
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. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00	
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00	
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00	
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00	
		-66.50 R	-51.15	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.38	11.03	1.38	HS 27.57	49.6
HS20	18.39	2.30	18.39	2.30	HS 45.94	82.7
2F1	27.70	5.79	27.70	5.79	0.00	86.9
3F1	19.31	3.55	19.31	3.55	0.00	81.7
4F1	17.95	3.04	17.95	3.04	0.00	82.2

5C1	23.48	3.65	23.48	3.65	0.00	146.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 -3.0
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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02		
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07			
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02		
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00			
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00			
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00			
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00			
		-66.50 R	-51.15	124.37	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	11.78	1.32	10.66	1.50	HS 26.35	47.4
HS20	19.63	2.19	17.76	2.50	HS 43.91	79.0
2F1	29.56	5.53	26.75	6.30	0.00	83.0
3F1	20.61	3.39	18.65	3.86	0.00	78.1
4F1	19.16	2.91	17.34	3.31	0.00	78.5
5C1	25.06	3.49	22.68	3.97	0.00	139.6

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
-0.7	0.8	-8.3	8.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.3
OPER	151.3	-107.3	107.2

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	-37.61	37.62	-28.93	28.94	-29.00	29.03	-22.31	22.33
OPER	HS20	-37.61	37.62	-28.93	28.94	-29.00	29.03	-22.31	22.33
OPER	2F1	-21.47	21.47	-16.51	16.52	0.00	0.00	0.00	0.00
OPER	3F1	-30.18	30.19	-23.21	23.22	0.00	0.00	0.00	0.00
OPER	4F1	-31.72	31.73	-24.40	24.41	0.00	0.00	0.00	0.00
OPER	5C1	-28.44	28.47	-21.88	21.90	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.19	61.5
HS20	2.85	2.85	HS 56.98	102.6
2F1	5.00	4.99	0.00	74.9
3F1	3.56	3.55	0.00	81.7
4F1	3.38	3.38	0.00	91.2
5C1	3.77	3.77	0.00	150.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.0
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. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

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	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	HS20	16.84 R	12.95	176.28	0.0	17.18	13.22	153.07	
		-105.71 L	-81.32	98.76	0.0	-95.14	-73.18	129.15	110.02
OPER	2F1	11.41 R	8.78	160.68	0.0	0.00	0.00	0.00	
		-41.93 R	-32.26	136.76	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.36 R	12.59	163.07	0.0	0.00	0.00	0.00	
		-68.37 R	-52.59	124.37	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.60 R	13.54	166.28	0.0	0.00	0.00	0.00	
		-79.78 L	-61.37	114.37	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.46 R	10.35	204.07	0.0	0.00	0.00	0.00	
		-66.50 R	-51.15	124.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.03	1.38	11.03	1.38	HS 27.57	49.6
HS20	18.39	2.30	18.39	2.30	HS 45.94	82.7
2F1	27.70	5.79	27.70	5.79	0.00	86.9
3F1	19.31	3.55	19.31	3.55	0.00	81.7
4F1	17.95	3.04	17.95	3.04	0.00	82.2

5C1	23.48	3.65	23.48	3.65	0.00	146.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 -1.4
Superimposed Dead Load Moment -15.4

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	190.4	-151.1	171.3	-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	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98			
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54		
OPER	HS20	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98			
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54		
OPER	2F1	14.35 R	11.04	131.98	0.0	0.00	0.00	0.00			
		-36.56 L	-28.13	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.06 L	10.81	76.10	0.0	0.00	0.00	0.00			
		-52.46 L	-40.35	100.02	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	14.94 L	11.50	72.10	0.0	0.00	0.00	0.00			
		-56.45 L	-43.42	96.80	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	29.85 L	22.97	74.98	0.0	0.00	0.00	0.00			
		-46.15 L	-35.50	95.63	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	7.11	2.48	6.39	2.80	HS 49.69	89.4
HS20	11.85	4.14	10.65	4.67	HS 82.82	149.1
2F1	22.12	6.89	19.89	7.76	0.00	103.3
3F1	22.58	4.80	20.31	5.41	0.00	110.4
4F1	21.24	4.46	19.10	5.03	0.00	120.5
5C1	10.63	5.46	9.56	6.15	0.00	218.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

6.100

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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	109.0

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	-3.19	32.76	-2.45	25.20	-3.50	26.23	-2.69	20.17
OPER	HS20	-3.19	32.76	-2.45	25.20	-3.50	26.23	-2.69	20.17
OPER	2F1	-2.26	19.28	-1.74	14.83	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	26.62	-2.49	20.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	27.43	-2.66	21.10	0.00	0.00	0.00	0.00
OPER	5C1	-3.27	25.02	-2.52	19.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.20	2.00	HS 39.92	71.9
HS20	35.33	3.33	HS 66.54	119.8
2F1	54.83	5.65	0.00	84.8
3F1	38.23	4.09	0.00	94.2
4F1	35.77	3.97	0.00	107.3
5C1	37.81	4.36	0.00	174.3

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 -1.4
Superimposed Dead Load Moment -15.4

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. 157.6	160.9	-174.3	160.9	-174.3	177.7	-157.6	177.7	-
OPER 262.6	279.4	-279.4	279.4	-279.4	296.2	-262.6	296.2	-

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	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98	
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54
OPER	HS20	18.14 R	13.96	149.98	0.0	26.79	20.61	121.98	
		-60.83 R	-46.79	128.80	0.0	-56.83	-43.72	110.02	131.54
OPER	2F1	14.35 R	11.04	131.98	0.0	0.00	0.00	0.00	
		-36.56 L	-28.13	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.06 L	10.81	76.10	0.0	0.00	0.00	0.00	
		-52.46 L	-40.35	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.94 L	11.50	72.10	0.0	0.00	0.00	0.00	
		-56.45 L	-43.42	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.85 L	22.97	74.98	0.0	0.00	0.00	0.00	
		-46.15 L	-35.50	95.63	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.63	2.59	6.63	2.59	HS 51.81	93.3
HS20	11.05	4.32	11.05	4.32	HS 86.35	155.4
2F1	20.64	7.18	20.64	7.18	0.00	107.7
3F1	21.07	5.01	21.07	5.01	0.00	115.2
4F1	19.82	4.65	19.82	4.65	0.00	125.6

5C1	9.92	5.69	9.92	5.69	0.00	227.7
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 -0.1
Superimposed Dead Load Moment -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	-160.4	161.9	-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	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37			
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18		
OPER	HS20	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37			
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18		
OPER	2F1	40.63 R	31.26	134.37	0.0	0.00	0.00	0.00			
		-31.26 L	-24.05	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.05 R	37.73	138.37	0.0	0.00	0.00	0.00			
		-44.85 L	-34.50	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.92 R	34.55	142.37	0.0	0.00	0.00	0.00			
		-48.26 L	-37.12	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.74 L	45.18	77.37	0.0	0.00	0.00	0.00			
		-41.74 L	-32.11	98.02	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	2.88	3.45	2.58	3.86	HS 51.56	92.8
HS20	4.81	5.75	4.30	6.44	HS 85.93	154.7
2F1	7.43	8.55	6.64	9.58	0.00	99.6
3F1	6.15	5.96	5.50	6.68	0.00	126.6
4F1	6.72	5.54	6.01	6.20	0.00	149.6
5C1	5.14	6.41	4.59	7.17	0.00	183.8

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.	6.200		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	-3.19	27.59	-2.45	21.22	-4.84	23.15	-3.72	17.81
OPER	HS20	-3.19	27.59	-2.45	21.22	-4.84	23.15	-3.72	17.81
OPER	2F1	-2.26	16.81	-1.74	12.93	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	22.74	-2.49	17.49	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	23.46	-2.66	18.05	0.00	0.00	0.00	0.00
OPER	5C1	-4.92	21.40	-3.78	16.47	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.12	2.41	HS 48.19	86.7
HS20	25.20	4.02	HS 80.32	144.6
2F1	54.03	6.59	0.00	98.9
3F1	37.67	4.87	0.00	112.0
4F1	35.25	4.72	0.00	127.5
5C1	24.80	5.18	0.00	207.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.200
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	167.1	-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	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37	
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18
OPER	HS20	62.82 R	48.32	152.37	0.0	47.08	36.21	124.37	
		-46.50 L	-35.77	86.80	0.0	-37.14	-28.57	110.02	62.18
OPER	2F1	40.63 R	31.26	134.37	0.0	0.00	0.00	0.00	
		-31.26 L	-24.05	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.05 R	37.73	138.37	0.0	0.00	0.00	0.00	
		-44.85 L	-34.50	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.92 R	34.55	142.37	0.0	0.00	0.00	0.00	
		-48.26 L	-37.12	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.74 L	45.18	77.37	0.0	0.00	0.00	0.00	
		-41.74 L	-32.11	98.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.61	96.5
HS20	4.47	5.98	4.47	5.98	HS 89.35	160.8
2F1	6.91	8.90	6.91	8.90	0.00	103.6
3F1	5.72	6.20	5.72	6.20	0.00	131.6
4F1	6.25	5.76	6.25	5.76	0.00	155.6

5C1	4.78	6.66	4.78	6.66	0.00	191.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
0.8	9.2

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	174.4	-167.2	155.2	-186.4
OPER	300.6C	-268.7	268.7	-300.6C	290.7	-278.6	258.7	-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	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76			
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00		
OPER	HS20	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76			
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00		
OPER	2F1	59.69 R	45.91	136.76	0.0	0.00	0.00	0.00			
		-25.96 L	-19.97	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.16 R	57.82	140.76	0.0	0.00	0.00	0.00			
		-37.24 L	-28.65	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.44 R	58.80	140.76	0.0	0.00	0.00	0.00			
		-40.07 L	-30.82	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.61 L	60.47	79.76	0.0	0.00	0.00	0.00			
		-39.25 L	-30.19	98.80	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	1.92	4.33	1.71	4.83	HS 34.27	61.7
HS20	3.21	7.22	2.86	8.05	HS 57.11	102.8
2F1	4.87	10.73	4.33	11.97	0.00	65.0
3F1	3.87	7.48	3.44	8.34	0.00	79.2
4F1	3.80	6.95	3.38	7.75	0.00	91.4
5C1	3.70	7.10	3.29	7.91	0.00	131.6

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.	6.300		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	112.6

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	-5.50	22.60	-4.23	17.38	-7.36	19.92	-5.66	15.32
OPER	HS20	-5.50	22.60	-4.23	17.38	-7.36	19.92	-5.66	15.32
OPER	2F1	-3.96	14.16	-3.05	10.89	0.00	0.00	0.00	0.00
OPER	3F1	-4.23	18.72	-3.25	14.40	0.00	0.00	0.00	0.00
OPER	4F1	-3.46	19.27	-2.66	14.82	0.00	0.00	0.00	0.00
OPER	5C1	-6.90	17.81	-5.31	13.70	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.80	2.99	HS 59.78	107.6
HS20	16.33	4.98	HS 99.64	179.3
2F1	30.35	7.95	0.00	119.2
3F1	28.42	6.01	0.00	138.3
4F1	34.73	5.84	0.00	157.8
5C1	17.41	6.32	0.00	252.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

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. 173.6	171.6	-163.7	171.6	-163.7	161.7	-173.6	161.7	-
OPER 289.4	279.4	-279.4	279.4	-279.4	269.4	-289.4	269.4	-

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	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76	
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00
OPER	HS20	90.59 R	69.69	154.76	0.0	68.64	52.80	126.76	
		-38.61 L	-29.70	86.80	0.0	-31.24	-24.03	110.02	0.00
OPER	2F1	59.69 R	45.91	136.76	0.0	0.00	0.00	0.00	
		-25.96 L	-19.97	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.16 R	57.82	140.76	0.0	0.00	0.00	0.00	
		-37.24 L	-28.65	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.44 R	58.80	140.76	0.0	0.00	0.00	0.00	
		-40.07 L	-30.82	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.61 L	60.47	79.76	0.0	0.00	0.00	0.00	
		-39.25 L	-30.19	98.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.78	4.50	1.78	4.50	HS 35.69	64.2
HS20	2.97	7.49	2.97	7.49	HS 59.48	107.1
2F1	4.51	11.15	4.51	11.15	0.00	67.7
3F1	3.59	7.77	3.59	7.77	0.00	82.4
4F1	3.53	7.22	3.53	7.22	0.00	95.2

5C1	3.43	7.37	3.43	7.37	0.00	137.1
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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 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	170.3	-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	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15			
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00		
OPER	HS20	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15			
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00		
OPER	2F1	70.00 R	53.85	139.15	0.0	0.00	0.00	0.00			
		-20.65 L	-15.89	102.41	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.57 R	68.13	139.15	0.0	0.00	0.00	0.00			
		-29.63 L	-22.79	100.02	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.60 R	72.77	143.15	0.0	0.00	0.00	0.00			
		-31.89 L	-24.53	96.80	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.27 R	68.67	141.15	0.0	0.00	0.00	0.00			
		-37.28 L	-28.68	100.41	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	1.68	5.58	1.49	6.20	HS 29.84	53.7
HS20	2.80	9.29	2.49	10.34	HS 49.74	89.5
2F1	4.05	13.82	3.60	15.37	0.00	54.0
3F1	3.20	9.64	2.84	10.72	0.00	65.4
4F1	3.00	8.95	2.66	9.96	0.00	71.9
5C1	3.18	7.66	2.82	8.52	0.00	112.8

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.	6.400		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	-118.4	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	-10.43	18.83	-8.02	14.48	-10.20	16.63	-7.84	12.80
OPER	HS20	-10.43	18.83	-8.02	14.48	-10.20	16.63	-7.84	12.80
OPER	2F1	-6.24	11.45	-4.80	8.81	0.00	0.00	0.00	0.00
OPER	3F1	-7.35	14.72	-5.66	11.32	0.00	0.00	0.00	0.00
OPER	4F1	-6.23	14.83	-4.79	11.41	0.00	0.00	0.00	0.00
OPER	5C1	-9.18	14.80	-7.06	11.38	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.81	3.64	HS 72.89	131.2
HS20	11.35	6.07	HS 121.48	218.7
2F1	18.98	9.99	0.00	149.8
3F1	16.09	7.77	0.00	178.7
4F1	19.00	7.71	0.00	208.2
5C1	12.89	7.73	0.00	309.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 15.5

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. 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	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15	
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00
OPER	HS20	101.24 R	77.88	157.15	0.0	81.67	62.82	129.15	
		-30.72 L	-23.63	86.80	0.0	-27.30	-21.00	110.02	0.00
OPER	2F1	70.00 R	53.85	139.15	0.0	0.00	0.00	0.00	
		-20.65 L	-15.89	102.41	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.57 R	68.13	139.15	0.0	0.00	0.00	0.00	
		-29.63 L	-22.79	100.02	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.60 R	72.77	143.15	0.0	0.00	0.00	0.00	
		-31.89 L	-24.53	96.80	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.27 R	68.67	141.15	0.0	0.00	0.00	0.00	
		-37.28 L	-28.68	100.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	5.79	1.56	5.79	HS 31.12	56.0
HS20	2.59	9.64	2.59	9.64	HS 51.86	93.3
2F1	3.75	14.35	3.75	14.35	0.00	56.3
3F1	2.96	10.00	2.96	10.00	0.00	68.2
4F1	2.78	9.29	2.78	9.29	0.00	74.9

5C1	2.94	7.95	2.94	7.95	0.00	117.6
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.461

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	390.83	109.1
bott	22.62		18.32		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	11.96	1.00	33000.	73.86	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.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
1.6	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.	180.4C	-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	249.1	-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	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54			
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07		0.00	
OPER	HS20	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54			
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07		0.00	
OPER	2F1	71.08 R	54.68	141.54	0.0	0.00	0.00	0.00			
		-15.58 R	-11.99	160.68	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.19 L	72.45	121.54	0.0	0.00	0.00	0.00			
		-22.35 R	-17.19	163.07	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	97.83 L	75.25	117.54	0.0	0.00	0.00	0.00			
		-24.04 R	-18.49	166.28	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	93.08 R	71.60	182.54	0.0	0.00	0.00	0.00			
		-36.84 R	-28.34	162.68	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	1.72	7.35	1.53	8.17	HS 30.57	55.0
HS20	2.87	12.26	2.55	13.62	HS 50.94	91.7
2F1	3.95	18.49	3.51	20.55	0.00	52.6
3F1	2.98	12.89	2.64	14.32	0.00	60.8
4F1	2.87	11.99	2.55	13.32	0.00	68.8
5C1	3.02	7.82	2.68	8.69	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.

6.500

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 (-)	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	-14.90	14.90	-11.46	11.46	-13.28	13.40	-10.22	10.31
OPER	HS20	-14.90	14.90	-11.46	11.46	-13.28	13.40	-10.22	10.31
OPER	2F1	-8.76	8.78	-6.74	6.75	0.00	0.00	0.00	0.00
OPER	3F1	-10.87	10.90	-8.36	8.38	0.00	0.00	0.00	0.00
OPER	4F1	-10.26	10.30	-7.90	7.92	0.00	0.00	0.00	0.00
OPER	5C1	-11.71	11.79	-9.01	9.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.69	4.68	HS 93.54	168.4
HS20	7.82	7.80	HS 155.89	280.6
2F1	13.31	13.23	0.00	198.5
3F1	10.72	10.66	0.00	245.2
4F1	11.36	11.28	0.00	304.6
5C1	9.95	9.85	0.00	394.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
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. 179.4	175.4	-159.8	175.4	-159.8	155.9	-179.4	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	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54	
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07	0.00
OPER	HS20	97.81 R	75.24	145.54	0.0	86.88	66.83	131.54	
		-23.00 R	-17.69	176.28	0.0	-23.51	-18.09	153.07	0.00
OPER	2F1	71.08 R	54.68	141.54	0.0	0.00	0.00	0.00	
		-15.58 R	-11.99	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.19 L	72.45	121.54	0.0	0.00	0.00	0.00	
		-22.35 R	-17.19	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	97.83 L	75.25	117.54	0.0	0.00	0.00	0.00	
		-24.04 R	-18.49	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.08 R	71.60	182.54	0.0	0.00	0.00	0.00	
		-36.84 R	-28.34	162.68	0.0	0.00	0.00	0.00	0.00

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	7.63	1.59	7.63	HS 31.88	57.4
HS20	2.66	12.71	2.66	12.71	HS 53.14	95.7
2F1	3.66	19.18	3.66	19.18	0.00	54.8
3F1	2.76	13.37	2.76	13.37	0.00	63.5
4F1	2.66	12.43	2.66	12.43	0.00	71.7

5C1	2.79	8.11	2.79	8.11	0.00	111.7
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 16.1

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	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.2

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	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93			
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00		
OPER	HS20	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93			
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00		
OPER	2F1	70.05 L	53.88	123.93	0.0	0.00	0.00	0.00			
		-20.98 R	-16.14	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	88.66 L	68.20	123.93	0.0	0.00	0.00	0.00			
		-30.09 R	-23.15	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.70 L	72.84	119.93	0.0	0.00	0.00	0.00			
		-32.37 R	-24.90	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	89.93 L	69.18	121.93	0.0	0.00	0.00	0.00			
		-37.55 R	-28.89	162.68	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	1.68	5.55	1.49	6.16	HS 29.72	53.5
HS20	2.79	9.24	2.48	10.27	HS 49.54	89.2
2F1	4.04	13.64	3.59	15.16	0.00	53.8
3F1	3.19	9.51	2.83	10.57	0.00	65.1
4F1	2.99	8.84	2.65	9.83	0.00	71.6
5C1	3.15	7.62	2.79	8.47	0.00	111.7

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.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.1	-1.6	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.7	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	-18.84	10.44	-14.49	8.03	-16.51	10.31	-12.70	7.93
OPER	HS20	-18.84	10.44	-14.49	8.03	-16.51	10.31	-12.70	7.93
OPER	2F1	-11.43	6.25	-8.79	4.81	0.00	0.00	0.00	0.00
OPER	3F1	-14.69	7.37	-11.30	5.67	0.00	0.00	0.00	0.00
OPER	4F1	-14.80	6.24	-11.39	4.80	0.00	0.00	0.00	0.00
OPER	5C1	-14.79	9.22	-11.38	7.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.65	6.79	HS 73.03	131.5
HS20	6.09	11.31	HS 121.72	219.1
2F1	10.03	18.89	0.00	150.5
3F1	7.80	16.02	0.00	179.5
4F1	7.75	18.93	0.00	209.1
5C1	7.75	12.81	0.00	310.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.600
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. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

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	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93	
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00
OPER	HS20	101.37 L	77.98	105.93	0.0	81.95	63.04	133.93	
		-30.97 R	-23.82	176.28	0.0	-27.28	-20.99	153.07	0.00
OPER	2F1	70.05 L	53.88	123.93	0.0	0.00	0.00	0.00	
		-20.98 R	-16.14	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	88.66 L	68.20	123.93	0.0	0.00	0.00	0.00	
		-30.09 R	-23.15	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.70 L	72.84	119.93	0.0	0.00	0.00	0.00	
		-32.37 R	-24.90	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	89.93 L	69.18	121.93	0.0	0.00	0.00	0.00	
		-37.55 R	-28.89	162.68	0.0	0.00	0.00	0.00	0.00

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	5.75	1.55	5.75	HS 31.00	55.8
HS20	2.58	9.59	2.58	9.59	HS 51.66	93.0
2F1	3.74	14.15	3.74	14.15	0.00	56.1
3F1	2.95	9.87	2.95	9.87	0.00	67.9
4F1	2.77	9.17	2.77	9.17	0.00	74.7

5C1	2.91	7.91	2.91	7.91	0.00	116.5
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 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	173.6	-168.0	154.4	-187.2
OPER	300.6C	-268.7	268.7	-300.6C	289.3	-279.9	257.4	-311.9

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	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33			
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00		
OPER	HS20	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33			
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00		
OPER	2F1	59.80 L	46.00	126.33	0.0	0.00	0.00	0.00			
		-26.38 R	-20.29	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.32 L	57.94	122.33	0.0	0.00	0.00	0.00			
		-37.84 R	-29.10	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.61 L	58.93	122.33	0.0	0.00	0.00	0.00			
		-40.70 R	-31.31	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.03 R	61.56	183.33	0.0	0.00	0.00	0.00			
		-39.75 R	-30.58	164.28	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	1.91	4.31	1.70	4.81	HS 34.02	61.2
HS20	3.19	7.19	2.84	8.01	HS 56.70	102.1
2F1	4.84	10.61	4.30	11.82	0.00	64.6
3F1	3.84	7.40	3.42	8.24	0.00	78.6
4F1	3.78	6.88	3.36	7.66	0.00	90.7
5C1	3.62	7.04	3.22	7.85	0.00	128.6

SHEAR 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 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	-22.61	5.52	-17.39	4.24	-19.80	7.47	-15.23	5.75
OPER	HS20	-22.61	5.52	-17.39	4.24	-19.80	7.47	-15.23	5.75
OPER	2F1	-14.14	3.97	-10.88	3.05	0.00	0.00	0.00	0.00
OPER	3F1	-18.69	4.23	-14.37	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.24	3.40	-14.80	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-17.80	6.91	-13.69	5.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.99	9.63	HS 59.90	107.8
HS20	4.99	16.05	HS 99.84	179.7
2F1	7.98	30.20	0.00	119.7
3F1	6.04	28.31	0.00	138.9
4F1	5.87	35.25	0.00	158.4
5C1	6.34	17.36	0.00	253.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
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. 174.4	172.2	-163.1	172.2	-163.1	160.9	-174.4	160.9	-
OPER 290.7	279.4	-279.4	279.4	-279.4	268.1	-290.7	268.1	-

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	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33	
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00
OPER	HS20	90.77 L	69.83	108.33	0.0	69.19	53.22	136.33	
		-38.94 R	-29.95	176.28	0.0	-31.05	-23.89	153.07	0.00
OPER	2F1	59.80 L	46.00	126.33	0.0	0.00	0.00	0.00	
		-26.38 R	-20.29	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.32 L	57.94	122.33	0.0	0.00	0.00	0.00	
		-37.84 R	-29.10	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.61 L	58.93	122.33	0.0	0.00	0.00	0.00	
		-40.70 R	-31.31	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.03 R	61.56	183.33	0.0	0.00	0.00	0.00	
		-39.75 R	-30.58	164.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	4.48	1.77	4.48	HS 35.44	63.8
HS20	2.95	7.47	2.95	7.47	HS 59.07	106.3
2F1	4.48	11.02	4.48	11.02	0.00	67.3
3F1	3.56	7.68	3.56	7.68	0.00	81.9
4F1	3.50	7.14	3.50	7.14	0.00	94.5

5C1	3.35	7.31	3.35	7.31	0.00	134.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 0.0
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	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.4

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	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72			
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98		
OPER	HS20	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72			
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98		
OPER	2F1	40.79 L	31.37	128.72	0.0	0.00	0.00	0.00			
		-31.78 R	-24.44	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.29 L	37.91	124.72	0.0	0.00	0.00	0.00			
		-45.58 R	-35.06	163.07	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	45.17 L	34.75	120.72	0.0	0.00	0.00	0.00			
		-49.03 R	-37.71	166.28	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.94 R	46.87	185.72	0.0	0.00	0.00	0.00			
		-42.43 R	-32.64	165.07	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	3.45	2.55	3.86	HS 50.98	91.8
HS20	4.76	5.74	4.25	6.43	HS 84.97	152.9
2F1	7.35	8.48	6.57	9.48	0.00	98.5
3F1	6.09	5.91	5.44	6.61	0.00	125.0
4F1	6.64	5.49	5.93	6.15	0.00	148.4
5C1	4.92	6.35	4.40	7.10	0.00	175.9

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
-0.4	-4.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.6	73.0
OPER	151.3	-111.1	121.7

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	-27.56	3.17	-21.20	2.43	-23.04	4.95	-17.72	3.81
OPER	HS20	-27.56	3.17	-21.20	2.43	-23.04	4.95	-17.72	3.81
OPER	2F1	-16.79	2.22	-12.92	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-22.71	3.18	-17.47	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-23.44	3.40	-18.03	2.62	0.00	0.00	0.00	0.00
OPER	5C1	-21.30	4.90	-16.39	3.77	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.42	14.75	HS 48.35	87.0
HS20	4.03	24.59	HS 80.59	145.1
2F1	6.61	54.88	0.00	99.2
3F1	4.89	38.25	0.00	112.5
4F1	4.74	35.78	0.00	127.9
5C1	5.21	24.86	0.00	208.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.0
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. 168.1	167.9	-167.3	167.9	-167.3	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 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	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72	
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98
OPER	HS20	63.06 L	48.51	110.72	0.0	48.37	37.21	138.72	
		-46.91 R	-36.08	176.28	0.0	-35.34	-27.18	153.07	121.98
OPER	2F1	40.79 L	31.37	128.72	0.0	0.00	0.00	0.00	
		-31.78 R	-24.44	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.29 L	37.91	124.72	0.0	0.00	0.00	0.00	
		-45.58 R	-35.06	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	45.17 L	34.75	120.72	0.0	0.00	0.00	0.00	
		-49.03 R	-37.71	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.94 R	46.87	185.72	0.0	0.00	0.00	0.00	
		-42.43 R	-32.64	165.07	0.0	0.00	0.00	0.00	0.00

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	3.58	2.65	3.58	HS 53.03	95.4
HS20	4.42	5.97	4.42	5.97	HS 88.38	159.1
2F1	6.83	8.81	6.83	8.81	0.00	102.5
3F1	5.65	6.15	5.65	6.15	0.00	130.0
4F1	6.17	5.71	6.17	5.71	0.00	154.3

5C1	4.57	6.60	4.57	6.60	0.00	182.9
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -1.2
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.	180.4C	-161.2	161.2	-180.4C	188.8	-152.7	169.7	-171.9
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.5	282.8	-286.5

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	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11			
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07	131.54		
OPER	HS20	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11			
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07	131.54		
OPER	2F1	14.51 L	11.16	131.11	0.0	0.00	0.00	0.00			
		-37.18 R	-28.60	160.68	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.24 R	13.26	186.98	0.0	0.00	0.00	0.00			
		-53.32 R	-41.02	163.07	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	18.32 R	14.10	190.98	0.0	0.00	0.00	0.00			
		-57.36 R	-44.12	166.28	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	32.79 R	25.22	188.11	0.0	0.00	0.00	0.00			
		-46.95 R	-36.12	166.68	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	6.92	2.47	6.22	2.78	HS 49.37	88.9
HS20	11.53	4.11	10.36	4.63	HS 82.28	148.1
2F1	21.69	6.85	19.49	7.71	0.00	102.7
3F1	18.25	4.77	16.40	5.37	0.00	109.8
4F1	17.18	4.44	15.43	5.00	0.00	119.8
5C1	9.60	5.42	8.62	6.10	0.00	216.8

SHEAR 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 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	123.5

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	-32.74	3.30	-25.18	2.54	-26.12	3.56	-20.09	2.74
OPER	HS20	-32.74	3.30	-25.18	2.54	-26.12	3.56	-20.09	2.74
OPER	2F1	-19.27	2.22	-14.82	1.71	0.00	0.00	0.00	0.00
OPER	3F1	-26.59	3.18	-20.46	2.45	0.00	0.00	0.00	0.00
OPER	4F1	-27.40	3.42	-21.08	2.63	0.00	0.00	0.00	0.00
OPER	5C1	-24.87	3.23	-19.13	2.48	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	20.82	HS 40.05	72.1
HS20	3.34	34.71	HS 66.75	120.2
2F1	5.67	55.69	0.00	85.1
3F1	4.11	38.81	0.00	94.5
4F1	3.99	36.07	0.00	107.7
5C1	4.39	38.25	0.00	175.7

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 -1.2
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. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.3	279.4	-279.4	279.4	-279.4	293.5	-265.3	293.5	-

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	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11	
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07	131.54
OPER	HS20	18.42 L	14.17	113.11	0.0	27.29	20.99	141.11	
		-61.87 L	-47.59	134.28	0.0	-56.05	-43.12	153.07	131.54
OPER	2F1	14.51 L	11.16	131.11	0.0	0.00	0.00	0.00	
		-37.18 R	-28.60	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.24 R	13.26	186.98	0.0	0.00	0.00	0.00	
		-53.32 R	-41.02	163.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.32 R	14.10	190.98	0.0	0.00	0.00	0.00	
		-57.36 R	-44.12	166.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.79 R	25.22	188.11	0.0	0.00	0.00	0.00	
		-46.95 R	-36.12	166.68	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.45	2.57	6.45	2.57	HS 51.45	92.6
HS20	10.76	4.29	10.76	4.29	HS 85.76	154.4
2F1	20.23	7.14	20.23	7.14	0.00	107.0
3F1	17.02	4.97	17.02	4.97	0.00	114.4
4F1	16.02	4.62	16.02	4.62	0.00	124.9

5C1	8.95	5.65	8.95	5.65	0.00	226.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -2.8
 Superimposed Dead Load Moment -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00			
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00			
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00			
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00			
		-66.40 R	-51.07	148.28	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	8.97	1.33	8.11	1.51	HS 26.64	48.0
HS20	14.94	2.22	13.51	2.52	HS 44.40	79.9
2F1	24.19	5.53	21.87	6.28	0.00	82.9
3F1	16.91	3.42	15.29	3.88	0.00	78.6
4F1	15.77	2.92	14.26	3.32	0.00	78.9
5C1	18.67	3.55	16.88	4.03	0.00	141.8

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.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.7
OPER	151.3	-107.5	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	-32.74	37.80	-25.18	29.08	-26.12	28.78	-20.09	22.14
OPER	HS20	-32.74	37.80	-25.18	29.08	-26.12	28.78	-20.09	22.14
OPER	2F1	-19.27	21.52	-14.82	16.55	0.00	0.00	0.00	0.00
OPER	3F1	-26.59	30.29	-20.46	23.30	0.00	0.00	0.00	0.00
OPER	4F1	-27.40	31.88	-21.08	24.52	0.00	0.00	0.00	0.00
OPER	5C1	-24.87	28.58	-19.13	21.99	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.23	61.6
HS20	2.86	2.85	HS 57.06	102.7
2F1	5.01	5.01	0.00	75.1
3F1	3.56	3.56	0.00	81.9
4F1	3.39	3.38	0.00	91.3
5C1	3.80	3.77	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -30.5

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. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00	
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00	
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00	
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00	
		-66.40 R	-51.07	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.40	1.39	8.40	1.39	HS 27.86	50.1
HS20	13.99	2.32	13.99	2.32	HS 46.43	83.6
2F1	22.65	5.78	22.65	5.78	0.00	86.7
3F1	15.83	3.57	15.83	3.57	0.00	82.2
4F1	14.77	3.06	14.77	3.06	0.00	82.5

5C1	17.49	3.71	17.49	3.71	0.00	148.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.880

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -2.8
 Superimposed Dead Load Moment -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98			
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93		
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00			
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00		0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00			
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00		0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00			
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00		0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00			
		-66.40 R	-51.07	148.28	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	8.97	1.33	8.11	1.51	HS 26.64	48.0
HS20	14.94	2.22	13.51	2.52	HS 44.40	79.9
2F1	24.19	5.53	21.87	6.28	0.00	82.9
3F1	16.91	3.42	15.29	3.88	0.00	78.6
4F1	15.77	2.92	14.26	3.32	0.00	78.9
5C1	18.67	3.55	16.88	4.03	0.00	141.8

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.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-8.2	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.7
OPER	151.3	-107.5	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	-37.61	37.80	-28.93	29.08	-28.93	28.78	-22.25	22.14
OPER	HS20	-37.61	37.80	-28.93	29.08	-28.93	28.78	-22.25	22.14
OPER	2F1	-21.46	21.52	-16.51	16.55	0.00	0.00	0.00	0.00
OPER	3F1	-30.17	30.29	-23.21	23.30	0.00	0.00	0.00	0.00
OPER	4F1	-31.71	31.88	-24.39	24.52	0.00	0.00	0.00	0.00
OPER	5C1	-28.29	28.58	-21.76	21.99	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.71	1.71	HS 34.23	61.6
HS20	2.86	2.85	HS 57.06	102.7
2F1	5.01	5.01	0.00	75.1
3F1	3.56	3.56	0.00	81.9
4F1	3.39	3.38	0.00	91.3
5C1	3.80	3.77	0.00	150.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.8
Superimposed Dead Load Moment -30.5

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. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

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	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	HS20	22.35 R	17.19	200.20	0.0	19.84	15.26	176.98	
		-106.03 L	-81.56	122.68	0.0	-94.15	-72.42	153.07	133.93
OPER	2F1	13.80 R	10.62	184.59	0.0	0.00	0.00	0.00	
		-42.57 R	-32.75	160.68	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.75 R	15.19	186.98	0.0	0.00	0.00	0.00	
		-68.88 L	-52.98	139.07	0.0	0.00	0.00	0.00	0.00
OPER	4F1	21.17 R	16.28	190.20	0.0	0.00	0.00	0.00	
		-80.57 L	-61.98	138.28	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.88 R	13.75	226.38	0.0	0.00	0.00	0.00	
		-66.40 R	-51.07	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.40	1.39	8.40	1.39	HS 27.86	50.1
HS20	13.99	2.32	13.99	2.32	HS 46.43	83.6
2F1	22.65	5.78	22.65	5.78	0.00	86.7
3F1	15.83	3.57	15.83	3.57	0.00	82.2
4F1	14.77	3.06	14.77	3.06	0.00	82.5

5C1	17.49	3.71	17.49	3.71	0.00	148.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.7

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	189.4	-152.2	170.2	-171.4
OPER	300.6C	-268.7	268.7	-300.6C	315.6	-253.7	283.6	-285.6

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	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89			
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93		155.46	
OPER	HS20	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89			
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93		155.46	
OPER	2F1	14.14 R	10.88	155.89	0.0	0.00	0.00	0.00		0.00	
		-36.46 L	-28.05	126.33	0.0	0.00	0.00	0.00		0.00	0.00
OPER	3F1	14.02 L	10.78	100.02	0.0	0.00	0.00	0.00		0.00	
		-52.31 L	-40.23	123.93	0.0	0.00	0.00	0.00		0.00	0.00
OPER	4F1	14.90 L	11.46	96.02	0.0	0.00	0.00	0.00		0.00	
		-56.28 L	-43.29	120.72	0.0	0.00	0.00	0.00		0.00	0.00
OPER	5C1	29.62 L	22.79	98.89	0.0	0.00	0.00	0.00		0.00	
		-45.81 L	-35.24	119.54	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	6.94	2.51	6.24	2.82	HS 50.10	90.2
HS20	11.56	4.18	10.39	4.70	HS 83.50	150.3
2F1	22.32	6.96	20.06	7.84	0.00	104.4
3F1	22.52	4.85	20.24	5.46	0.00	111.5
4F1	21.18	4.51	19.04	5.07	0.00	121.7
5C1	10.65	5.54	9.57	6.24	0.00	221.5

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	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	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	-4.22	32.97	-3.25	25.36	-4.17	26.00	-3.20	20.00
OPER	HS20	-4.22	32.97	-3.25	25.36	-4.17	26.00	-3.20	20.00
OPER	2F1	-2.73	19.36	-2.10	14.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.91	26.76	-3.01	20.58	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	27.60	-3.20	21.23	0.00	0.00	0.00	0.00
OPER	5C1	-4.03	25.16	-3.10	19.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.50	2.00	HS 39.91	71.8
HS20	29.16	3.33	HS 66.52	119.7
2F1	45.07	5.66	0.00	84.9
3F1	31.51	4.10	0.00	94.2
4F1	29.59	3.97	0.00	107.2
5C1	30.57	4.36	0.00	174.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.3
Superimposed Dead Load Moment -13.7

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. 158.6	161.6	-173.6	161.6	-173.6	176.6	-158.6	176.6	-
OPER 264.4	279.4	-279.4	279.4	-279.4	294.4	-264.4	294.4	-

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	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89	
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46
OPER	HS20	17.82 R	13.70	173.89	0.0	27.29	21.00	145.89	
		-60.76 R	-46.74	152.72	0.0	-56.32	-43.33	133.93	155.46
OPER	2F1	14.14 R	10.88	155.89	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.02 L	10.78	100.02	0.0	0.00	0.00	0.00	
		-52.31 L	-40.23	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.90 L	11.46	96.02	0.0	0.00	0.00	0.00	
		-56.28 L	-43.29	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.62 L	22.79	98.89	0.0	0.00	0.00	0.00	
		-45.81 L	-35.24	119.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.47	2.61	6.47	2.61	HS 52.22	94.0
HS20	10.79	4.35	10.79	4.35	HS 87.04	156.7
2F1	20.82	7.25	20.82	7.25	0.00	108.8
3F1	21.00	5.05	21.00	5.05	0.00	116.3
4F1	19.76	4.70	19.76	4.70	0.00	126.8

5C1	9.94	5.77	9.94	5.77	0.00	230.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 -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	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28			
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10		
OPER	HS20	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28			
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10		
OPER	2F1	40.60 R	31.23	158.28	0.0	0.00	0.00	0.00			
		-31.25 L	-24.04	126.33	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	49.01 R	37.70	162.28	0.0	0.00	0.00	0.00			
		-44.83 L	-34.49	123.93	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.87 R	34.52	166.28	0.0	0.00	0.00	0.00			
		-48.24 L	-37.11	120.72	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.71 L	45.16	101.28	0.0	0.00	0.00	0.00			
		-41.67 L	-32.05	121.93	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	2.88	3.45	2.58	3.87	HS 51.54	92.8
HS20	4.80	5.76	4.30	6.45	HS 85.90	154.6
2F1	7.43	8.56	6.64	9.59	0.00	99.6
3F1	6.16	5.97	5.50	6.68	0.00	126.6
4F1	6.72	5.55	6.01	6.21	0.00	149.8
5C1	5.14	6.42	4.59	7.19	0.00	183.8

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.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.4	0.0	4.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.9
OPER	151.3	-121.3	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	-4.22	27.81	-3.25	21.39	-4.98	22.96	-3.83	17.66
OPER	HS20	-4.22	27.81	-3.25	21.39	-4.98	22.96	-3.83	17.66
OPER	2F1	-2.73	16.92	-2.10	13.01	0.00	0.00	0.00	0.00
OPER	3F1	-3.91	22.91	-3.01	17.62	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	23.62	-3.20	18.17	0.00	0.00	0.00	0.00
OPER	5C1	-5.81	21.57	-4.47	16.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.60	2.40	HS 48.09	86.6
HS20	24.34	4.01	HS 80.15	144.3
2F1	44.42	6.59	0.00	98.8
3F1	31.05	4.86	0.00	111.9
4F1	29.16	4.72	0.00	127.4
5C1	20.87	5.17	0.00	206.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.200
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	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28	
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10
OPER	HS20	62.79 R	48.30	176.28	0.0	47.13	36.25	148.28	
		-46.48 L	-35.76	110.72	0.0	-37.03	-28.49	133.93	86.10
OPER	2F1	40.60 R	31.23	158.28	0.0	0.00	0.00	0.00	
		-31.25 L	-24.04	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	49.01 R	37.70	162.28	0.0	0.00	0.00	0.00	
		-44.83 L	-34.49	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.87 R	34.52	166.28	0.0	0.00	0.00	0.00	
		-48.24 L	-37.11	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.71 L	45.16	101.28	0.0	0.00	0.00	0.00	
		-41.67 L	-32.05	121.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.68	3.59	2.68	3.59	HS 53.59	96.5
HS20	4.47	5.99	4.47	5.99	HS 89.32	160.8
2F1	6.91	8.91	6.91	8.91	0.00	103.6
3F1	5.72	6.21	5.72	6.21	0.00	131.6
4F1	6.25	5.77	6.25	5.77	0.00	155.8

5C1	4.78	6.68	4.78	6.68	0.00	191.1
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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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 0.7
Superimposed Dead Load Moment 8.0

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	175.2	-166.4	156.0	-185.6
OPER	300.6C	-268.7	268.7	-300.6C	292.0	-277.3	260.0	-309.3

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	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68			
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00		
OPER	HS20	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68			
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00		
OPER	2F1	59.96 R	46.12	160.68	0.0	0.00	0.00	0.00			
		-26.04 L	-20.03	126.33	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	75.56 R	58.13	164.68	0.0	0.00	0.00	0.00			
		-37.36 L	-28.74	123.93	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	76.83 R	59.10	164.68	0.0	0.00	0.00	0.00			
		-40.20 L	-30.92	120.72	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	78.95 L	60.73	103.68	0.0	0.00	0.00	0.00			
		-39.92 L	-30.70	122.72	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	1.93	4.30	1.72	4.79	HS 34.40	61.9
HS20	3.22	7.16	2.87	7.98	HS 57.33	103.2
2F1	4.87	10.65	4.34	11.88	0.00	65.1
3F1	3.86	7.42	3.44	8.28	0.00	79.1
4F1	3.80	6.90	3.38	7.69	0.00	91.4
5C1	3.70	6.95	3.29	7.75	0.00	131.7

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	2.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.5	113.2

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	-5.44	22.69	-4.18	17.45	-7.46	19.75	-5.74	15.20
OPER	HS20	-5.44	22.69	-4.18	17.45	-7.46	19.75	-5.74	15.20
OPER	2F1	-3.90	14.29	-3.00	10.99	0.00	0.00	0.00	0.00
OPER	3F1	-4.16	18.91	-3.20	14.54	0.00	0.00	0.00	0.00
OPER	4F1	-4.16	19.46	-3.20	14.97	0.00	0.00	0.00	0.00
OPER	5C1	-7.82	17.98	-6.01	13.83	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.61	2.99	HS 59.88	107.8
HS20	16.01	4.99	HS 99.80	179.6
2F1	30.67	7.92	0.00	118.8
3F1	28.73	5.99	0.00	137.7
4F1	28.73	5.82	0.00	157.1
5C1	15.29	6.30	0.00	251.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.300
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.0

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. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 288.0	279.4	-279.4	279.4	-279.4	270.8	-288.0	270.8	-

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	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68	
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00
OPER	HS20	90.72 R	69.78	178.68	0.0	68.31	52.55	150.68	
		-38.73 L	-29.80	110.72	0.0	-31.77	-24.44	133.93	0.00
OPER	2F1	59.96 R	46.12	160.68	0.0	0.00	0.00	0.00	
		-26.04 L	-20.03	126.33	0.0	0.00	0.00	0.00	0.00
OPER	3F1	75.56 R	58.13	164.68	0.0	0.00	0.00	0.00	
		-37.36 L	-28.74	123.93	0.0	0.00	0.00	0.00	0.00
OPER	4F1	76.83 R	59.10	164.68	0.0	0.00	0.00	0.00	
		-40.20 L	-30.92	120.72	0.0	0.00	0.00	0.00	0.00
OPER	5C1	78.95 L	60.73	103.68	0.0	0.00	0.00	0.00	
		-39.92 L	-30.70	122.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.79	4.46	1.79	4.46	HS 35.82	64.5
HS20	2.98	7.44	2.98	7.44	HS 59.70	107.5
2F1	4.52	11.06	4.52	11.06	0.00	67.7
3F1	3.58	7.71	3.58	7.71	0.00	82.4
4F1	3.52	7.16	3.52	7.16	0.00	95.2

5C1

3.43

7.22

3.43

7.22

0.00

137.2

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 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. 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 1.1
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.	180.4C	-161.2	161.2	-180.4C	172.0	-169.6	152.8	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.6	-282.7	254.7	-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	101.20	R	77.84	181.07	0.0	81.04	62.34	153.07		
		-30.99	L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00	
OPER	HS20	101.20	R	77.84	181.07	0.0	81.04	62.34	153.07		
		-30.99	L	-23.84	110.72	0.0	-28.44	-21.88	133.93	0.00	
OPER	2F1	70.62	R	54.33	163.07	0.0	0.00	0.00	0.00		
		-20.83	L	-16.03	126.33	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	89.38	R	68.76	163.07	0.0	0.00	0.00	0.00		
		-29.89	L	-22.99	123.93	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	95.46	R	73.43	167.07	0.0	0.00	0.00	0.00		
		-32.16	L	-24.74	120.72	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	90.04	R	69.26	165.07	0.0	0.00	0.00	0.00		
		-39.49	R	-30.38	185.72	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	1.70	5.47	1.51	6.09	HS 30.20	54.4
HS20	2.83	9.12	2.52	10.15	HS 50.33	90.6
2F1	4.06	13.57	3.61	15.10	0.00	54.1
3F1	3.21	9.46	2.85	10.53	0.00	65.5
4F1	3.00	8.79	2.67	9.78	0.00	72.0
5C1	3.18	7.16	2.83	7.97	0.00	113.1

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.	7.400		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 (-)	Capacity for LL+I (+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.0

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	-10.44	18.94	-8.03	14.57	-10.27	16.49	-7.90	12.69
OPER	HS20	-10.44	18.94	-8.03	14.57	-10.27	16.49	-7.90	12.69
OPER	2F1	-6.14	11.59	-4.73	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.24	14.90	-5.57	11.46	0.00	0.00	0.00	0.00
OPER	4F1	-6.14	15.05	-4.72	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.99	14.71	-7.68	11.31	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.77	3.64	HS 72.89	131.2
HS20	11.28	6.07	HS 121.48	218.7
2F1	19.16	9.93	0.00	148.9
3F1	16.25	7.72	0.00	177.5
4F1	19.18	7.64	0.00	206.3
5C1	11.79	7.82	0.00	312.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.400
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.1
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. 176.0	173.2	-162.0	173.2	-162.0	159.2	-176.0	159.2	-
OPER 293.4	279.4	-279.4	279.4	-279.4	265.4	-293.4	265.4	-

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	101.20 R	77.84	181.07	0.0	81.04	153.07	
		-30.99 L	-23.84	110.72	0.0	-28.44	133.93	0.00
OPER	HS20	101.20 R	77.84	181.07	0.0	81.04	153.07	
		-30.99 L	-23.84	110.72	0.0	-28.44	133.93	0.00
OPER	2F1	70.62 R	54.33	163.07	0.0	0.00	0.00	0.00
		-20.83 L	-16.03	126.33	0.0	0.00	0.00	0.00
OPER	3F1	89.38 R	68.76	163.07	0.0	0.00	0.00	0.00
		-29.89 L	-22.99	123.93	0.0	0.00	0.00	0.00
OPER	4F1	95.46 R	73.43	167.07	0.0	0.00	0.00	0.00
		-32.16 L	-24.74	120.72	0.0	0.00	0.00	0.00
OPER	5C1	90.04 R	69.26	165.07	0.0	0.00	0.00	0.00
		-39.49 R	-30.38	185.72	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	5.68	1.57	5.68	HS 31.47	56.6
HS20	2.62	9.47	2.62	9.47	HS 52.45	94.4
2F1	3.76	14.08	3.76	14.08	0.00	56.4
3F1	2.97	9.82	2.97	9.82	0.00	68.3
4F1	2.78	9.12	2.78	9.12	0.00	75.1

5C1	2.95	7.43	2.95	7.43	0.00	117.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.904

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.40		108.3

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	11.96	1.00	33000.	73.86	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 1.2
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	171.3	-170.2	152.1	-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	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46			
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00		
OPER	HS20	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46			
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00		
OPER	2F1	72.01 R	55.39	165.46	0.0	0.00	0.00	0.00			
		-18.86 R	-14.51	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	95.59 L	73.53	145.46	0.0	0.00	0.00	0.00			
		-26.98 R	-20.75	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	99.25 L	76.34	141.46	0.0	0.00	0.00	0.00			
		-28.91 R	-22.24	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.55 L	71.96	104.46	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	186.59	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	5.58	1.54	6.21	HS 30.83	55.5
HS20	2.89	9.30	2.57	10.34	HS 51.38	92.5
2F1	3.97	15.05	3.52	16.74	0.00	52.8
3F1	2.99	10.52	2.65	11.70	0.00	61.0
4F1	2.88	9.81	2.56	10.92	0.00	69.0
5C1	3.05	6.95	2.71	7.73	0.00	108.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.500

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.0	-0.5	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	-15.01	15.05	-11.54	11.58	-13.32	13.27	-10.25	10.21
OPER	HS20	-15.01	15.05	-11.54	11.58	-13.32	13.27	-10.25	10.21
OPER	2F1	-8.64	8.91	-6.64	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-10.72	11.05	-8.25	8.50	0.00	0.00	0.00	0.00
OPER	4F1	-10.08	10.52	-7.75	8.10	0.00	0.00	0.00	0.00
OPER	5C1	-12.26	11.96	-9.43	9.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.64	4.66	HS 92.71	166.9
HS20	7.73	7.76	HS 154.52	278.1
2F1	13.42	13.11	0.00	196.6
3F1	10.81	10.57	0.00	243.2
4F1	11.50	11.10	0.00	299.7
5C1	9.45	9.77	0.00	378.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500
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 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	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	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46	
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00
OPER	HS20	98.70 R	75.92	169.46	0.0	86.01	66.16	155.46	
		-30.52 R	-23.48	200.20	0.0	-27.25	-20.96	176.98	0.00
OPER	2F1	72.01 R	55.39	165.46	0.0	0.00	0.00	0.00	
		-18.86 R	-14.51	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	95.59 L	73.53	145.46	0.0	0.00	0.00	0.00	
		-26.98 R	-20.75	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	99.25 L	76.34	141.46	0.0	0.00	0.00	0.00	
		-28.91 R	-22.24	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.55 L	71.96	104.46	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	186.59	0.0	0.00	0.00	0.00	0.00

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	5.79	1.61	5.79	HS 32.14	57.8
HS20	2.68	9.65	2.68	9.65	HS 53.56	96.4
2F1	3.67	15.62	3.67	15.62	0.00	55.1
3F1	2.77	10.92	2.77	10.92	0.00	63.6
4F1	2.66	10.19	2.66	10.19	0.00	71.9

5C1	2.83	7.21	2.83	7.21	0.00	113.0
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 0.9
 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	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85			
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00		
OPER	HS20	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85			
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00		
OPER	2F1	71.35 L	54.88	147.85	0.0	0.00	0.00	0.00			
		-25.39 R	-19.53	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.64 L	69.72	147.85	0.0	0.00	0.00	0.00			
		-36.32 R	-27.94	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	96.79 L	74.46	143.85	0.0	0.00	0.00	0.00			
		-38.93 R	-29.95	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	88.69 L	68.22	106.85	0.0	0.00	0.00	0.00			
		-43.23 R	-33.25	188.20	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	1.68	4.09	1.50	4.56	HS 29.93	53.9
HS20	2.80	6.82	2.49	7.60	HS 49.88	89.8
2F1	4.05	11.04	3.60	12.30	0.00	54.1
3F1	3.19	7.72	2.84	8.60	0.00	65.2
4F1	2.99	7.20	2.66	8.02	0.00	71.7
5C1	3.26	6.48	2.90	7.22	0.00	116.0

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.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear	
-0.2	-2.2	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.4	71.2
OPER	151.3	-114.0	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	-19.05	10.63	-14.66	8.17	-16.54	10.19	-12.72	7.84
OPER	HS20	-19.05	10.63	-14.66	8.17	-16.54	10.19	-12.72	7.84
OPER	2F1	-11.29	6.36	-8.68	4.90	0.00	0.00	0.00	0.00
OPER	3F1	-14.50	7.46	-11.16	5.74	0.00	0.00	0.00	0.00
OPER	4F1	-14.61	6.23	-11.24	4.79	0.00	0.00	0.00	0.00
OPER	5C1	-14.89	9.39	-11.45	7.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.59	6.70	HS 71.80	129.2
HS20	5.98	11.18	HS 119.66	215.4
2F1	10.10	18.66	0.00	151.5
3F1	7.86	15.91	0.00	180.8
4F1	7.80	19.05	0.00	210.6
5C1	7.66	12.65	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.600
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9
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 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	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85	
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00
OPER	HS20	103.09 L	79.30	129.85	0.0	80.84	62.18	157.85	
		-41.10 R	-31.61	200.20	0.0	-32.32	-24.86	176.98	0.00
OPER	2F1	71.35 L	54.88	147.85	0.0	0.00	0.00	0.00	
		-25.39 R	-19.53	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.64 L	69.72	147.85	0.0	0.00	0.00	0.00	
		-36.32 R	-27.94	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	96.79 L	74.46	143.85	0.0	0.00	0.00	0.00	
		-38.93 R	-29.95	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	88.69 L	68.22	106.85	0.0	0.00	0.00	0.00	
		-43.23 R	-33.25	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.56	4.25	1.56	4.25	HS 31.18	56.1
HS20	2.60	7.08	2.60	7.08	HS 51.96	93.5
2F1	3.75	11.46	3.75	11.46	0.00	56.3
3F1	2.95	8.01	2.95	8.01	0.00	68.0
4F1	2.77	7.47	2.77	7.47	0.00	74.7

5C1

3.02

6.73

3.02

6.73

0.00

120.8

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 0.3
Superimposed Dead Load Moment 3.5

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	178.1	-163.4	158.9	-182.6
OPER	300.6C	-268.7	268.7	-300.6C	296.9	-272.4	264.9	-304.4

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	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24			
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00		
OPER	HS20	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24			
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00		
OPER	2F1	61.53 L	47.33	150.24	0.0	0.00	0.00	0.00			
		-31.92 R	-24.56	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	77.76 L	59.81	146.24	0.0	0.00	0.00	0.00			
		-45.67 R	-35.13	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	79.23 L	60.95	146.24	0.0	0.00	0.00	0.00			
		-48.95 R	-37.65	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	75.97 L	58.44	144.24	0.0	0.00	0.00	0.00			
		-46.94 R	-36.11	188.20	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	1.91	3.16	1.71	3.53	HS 34.09	61.4
HS20	3.18	5.27	2.84	5.89	HS 56.82	102.3
2F1	4.82	8.53	4.30	9.54	0.00	64.6
3F1	3.82	5.97	3.41	6.66	0.00	78.4
4F1	3.75	5.57	3.34	6.22	0.00	90.3
5C1	3.91	5.80	3.49	6.49	0.00	139.5

SHEAR 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 Shear	Superimposed (-) Shear	Dead Load (+) Shear	Dead Load Shear
-0.3	-3.8	0.0	

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-22.82	5.73	-17.55	4.41	-19.82	7.33	-15.24	5.64
OPER	HS20	-22.82	5.73	-17.55	4.41	-19.82	7.33	-15.24	5.64
OPER	2F1	-13.99	4.04	-10.76	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.48	4.24	-14.21	3.26	0.00	0.00	0.00	0.00
OPER	4F1	-19.08	3.34	-14.68	2.57	0.00	0.00	0.00	0.00
OPER	5C1	-17.87	7.03	-13.75	5.41	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.87	HS 59.01	106.2
HS20	4.92	16.44	HS 98.34	177.0
2F1	8.02	29.87	0.00	120.3
3F1	6.07	28.43	0.00	139.7
4F1	5.88	36.09	0.00	158.8
5C1	6.28	17.14	0.00	251.1

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 0.3
Superimposed Dead Load Moment 3.5

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. 169.9	169.1	-166.1	169.1	-166.1	165.4	-169.9	165.4	-
OPER 283.2	279.4	-279.4	279.4	-279.4	275.6	-283.2	275.6	-

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	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24	
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00
OPER	HS20	93.24 L	71.73	132.24	0.0	67.74	52.11	160.24	
		-51.67 R	-39.75	200.20	0.0	-37.40	-28.77	176.98	0.00
OPER	2F1	61.53 L	47.33	150.24	0.0	0.00	0.00	0.00	
		-31.92 R	-24.56	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	77.76 L	59.81	146.24	0.0	0.00	0.00	0.00	
		-45.67 R	-35.13	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	79.23 L	60.95	146.24	0.0	0.00	0.00	0.00	
		-48.95 R	-37.65	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	75.97 L	58.44	144.24	0.0	0.00	0.00	0.00	
		-46.94 R	-36.11	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	3.29	1.77	3.29	HS 35.47	63.9
HS20	2.96	5.48	2.96	5.48	HS 59.12	106.4
2F1	4.48	8.87	4.48	8.87	0.00	67.2
3F1	3.55	6.20	3.55	6.20	0.00	81.5
4F1	3.48	5.78	3.48	5.78	0.00	93.9

5C1 3.63 6.03 3.63 6.03 0.00 145.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 -0.7
Superimposed Dead Load Moment -7.6

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	185.4	-156.2	166.2	-175.4
OPER	300.6C	-268.7	268.7	-300.6C	309.0	-260.3	277.0	-292.3

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	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63			
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10		
OPER	HS20	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63			
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10		
OPER	2F1	42.76 L	32.90	152.63	0.0	0.00	0.00	0.00			
		-38.45 R	-29.58	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.25 L	40.20	148.63	0.0	0.00	0.00	0.00			
		-55.01 R	-42.32	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.39 L	37.22	144.63	0.0	0.00	0.00	0.00			
		-58.96 R	-45.36	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.89 L	39.92	146.63	0.0	0.00	0.00	0.00			
		-51.32 R	-39.47	188.98	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	2.80	2.51	2.51	2.82	HS 50.18	90.3
HS20	4.67	4.18	4.19	4.70	HS 83.64	150.5
2F1	7.22	6.77	6.48	7.60	0.00	97.2
3F1	5.91	4.73	5.30	5.31	0.00	108.8
4F1	6.39	4.41	5.72	4.96	0.00	119.2
5C1	5.95	5.07	5.34	5.70	0.00	202.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.5	-5.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.4
OPER	151.3	-110.4	122.3

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	-27.47	3.11	-21.13	2.39	-23.07	4.78	-17.75	3.67
OPER	HS20	-27.47	3.11	-21.13	2.39	-23.07	4.78	-17.75	3.67
OPER	2F1	-16.65	2.18	-12.81	1.68	0.00	0.00	0.00	0.00
OPER	3F1	-22.50	3.12	-17.31	2.40	0.00	0.00	0.00	0.00
OPER	4F1	-23.34	3.34	-17.95	2.57	0.00	0.00	0.00	0.00
OPER	5C1	-21.74	4.95	-16.72	3.81	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.41	15.37	HS 48.24	86.8
HS20	4.02	25.61	HS 80.40	144.7
2F1	6.63	56.17	0.00	99.5
3F1	4.91	39.15	0.00	112.9
4F1	4.73	36.62	0.00	127.7
5C1	5.08	24.70	0.00	203.2

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 -0.7
Superimposed Dead Load Moment -7.6

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. 162.6	164.3	-171.0	164.3	-171.0	172.6	-162.6	172.6	-
OPER 271.1	279.4	-279.4	279.4	-279.4	287.7	-271.1	287.7	-

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	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63	
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10
OPER	HS20	66.16 L	50.89	134.63	0.0	45.53	35.02	162.63	
		-62.25 R	-47.88	200.20	0.0	-42.47	-32.67	176.98	86.10
OPER	2F1	42.76 L	32.90	152.63	0.0	0.00	0.00	0.00	
		-38.45 R	-29.58	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.25 L	40.20	148.63	0.0	0.00	0.00	0.00	
		-55.01 R	-42.32	186.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.39 L	37.22	144.63	0.0	0.00	0.00	0.00	
		-58.96 R	-45.36	190.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.89 L	39.92	146.63	0.0	0.00	0.00	0.00	
		-51.32 R	-39.47	188.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.61	2.61	2.61	2.61	HS 52.19	93.9
HS20	4.35	4.35	4.35	4.35	HS 86.98	156.6
2F1	6.73	7.05	6.73	7.05	0.00	100.9
3F1	5.51	4.93	5.51	4.93	0.00	113.3
4F1	5.95	4.60	5.95	4.60	0.00	124.1

5C1

5.55

5.28

5.55

5.28

0.00

211.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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 -2.1
Superimposed Dead Load Moment -22.7

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	195.2	-146.3	176.0	-165.5
OPER	300.6C	-268.7	268.7	-300.6C	325.4	-243.9	293.4	-275.9

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	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03			
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98	153.07		
OPER	HS20	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03			
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98	153.07		
OPER	2F1	16.36 L	12.58	155.03	0.0	0.00	0.00	0.00			
		-44.99 R	-34.60	184.59	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.18 L	10.90	151.03	0.0	0.00	0.00	0.00			
		-64.36 R	-49.51	186.98	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	7.94 L	6.11	119.93	0.0	0.00	0.00	0.00			
		-68.98 R	-53.06	190.20	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.63 L	18.18	114.03	0.0	0.00	0.00	0.00			
		-59.16 R	-45.50	193.77	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	8.36	1.94	7.53	2.20	HS 38.87	70.0
HS20	13.93	3.24	12.56	3.66	HS 64.78	116.6
2F1	19.90	5.42	17.94	6.13	0.00	81.3
3F1	22.95	3.79	20.70	4.29	0.00	87.2
4F1	40.96	3.54	36.93	4.00	0.00	95.5
5C1	13.77	4.12	12.41	4.66	0.00	164.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

7.900

HS20 HS20

2F1

3F1

4F1

5C1

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

-0.6

-7.1

0.0

Rat. Veh.	Shear Capacity VU	Available 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	-32.69	3.24	-25.14	2.49	-26.19	3.21	-20.15	2.47
OPER	HS20	-32.69	3.24	-25.14	2.49	-26.19	3.21	-20.15	2.47
OPER	2F1	-19.16	2.18	-14.73	1.68	0.00	0.00	0.00	0.00
OPER	3F1	-26.41	3.12	-20.31	2.40	0.00	0.00	0.00	0.00
OPER	4F1	-27.26	3.36	-20.97	2.59	0.00	0.00	0.00	0.00
OPER	5C1	-25.54	3.18	-19.65	2.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.99	22.99	HS 39.88	71.8
HS20	3.32	38.32	HS 66.46	119.6
2F1	5.67	57.00	0.00	85.1
3F1	4.11	39.73	0.00	94.6
4F1	3.98	36.92	0.00	107.6
5C1	4.25	38.99	0.00	170.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.900
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -2.1
Superimposed Dead Load Moment -22.7

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. 152.8	157.7	-177.5	157.7	-177.5	182.5	-152.8	182.5	-
OPER 254.7	279.4	-279.4	279.4	-279.4	304.1	-254.7	304.1	-

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	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98
OPER	HS20	21.74 L	16.72	137.03	0.0	23.36	17.97	165.03
		-75.31 L	-57.93	158.20	0.0	-62.52	-48.09	176.98
OPER	2F1	16.36 L	12.58	155.03	0.0	0.00	0.00	0.00
		-44.99 R	-34.60	184.59	0.0	0.00	0.00	0.00
OPER	3F1	14.18 L	10.90	151.03	0.0	0.00	0.00	0.00
		-64.36 R	-49.51	186.98	0.0	0.00	0.00	0.00
OPER	4F1	7.94 L	6.11	119.93	0.0	0.00	0.00	0.00
		-68.98 R	-53.06	190.20	0.0	0.00	0.00	0.00
OPER	5C1	23.63 L	18.18	114.03	0.0	0.00	0.00	0.00
		-59.16 R	-45.50	193.77	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	7.81	2.03	7.81	2.03	HS 40.58	73.0
HS20	13.02	3.38	13.02	3.38	HS 67.63	121.7
2F1	18.60	5.66	18.60	5.66	0.00	84.9
3F1	21.45	3.96	21.45	3.96	0.00	91.0
4F1	38.28	3.69	38.28	3.69	0.00	99.7

5C1	12.87	4.30	12.87	4.30	0.00	172.2
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.951

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.80		103.8

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-3.8	-41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

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	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00	0.00		
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00	0.00		
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00	0.00		
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00	0.00		
		-81.29 L	-62.53	162.59	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	13.40	1.19	12.16	1.36	HS 23.86	43.0
HS20	22.34	1.99	20.27	2.27	HS 39.77	71.6
2F1	33.22	4.33	30.15	4.95	0.00	65.0
3F1	23.16	2.91	21.02	3.33	0.00	66.9
4F1	21.52	2.44	19.53	2.79	0.00	65.8
5C1	26.59	2.75	24.13	3.14	0.00	109.8

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.	8.000		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	63.3
OPER	151.3	-106.8	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	-32.69	40.27	-25.14	30.98	-26.19	29.34	-20.15	22.57
OPER	HS20	-32.69	40.27	-25.14	30.98	-26.19	29.34	-20.15	22.57
OPER	2F1	-19.16	22.19	-14.73	17.07	0.00	0.00	0.00	0.00
OPER	3F1	-26.41	31.72	-20.31	24.40	0.00	0.00	0.00	0.00
OPER	4F1	-27.26	33.90	-20.97	26.07	0.00	0.00	0.00	0.00
OPER	5C1	-25.54	30.19	-19.65	23.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.70	1.57	HS 31.42	56.5
HS20	2.84	2.62	HS 52.36	94.2
2F1	4.99	4.75	0.00	71.3
3F1	3.56	3.32	0.00	76.4
4F1	3.39	3.11	0.00	84.0
5C1	3.67	3.49	0.00	139.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.8
Superimposed Dead Load Moment -41.7

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. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

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	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00	
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00	
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00	
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00	
		-81.29 L	-62.53	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.58	1.25	12.58	1.25	HS 25.01	45.0
HS20	20.97	2.08	20.97	2.08	HS 41.68	75.0
2F1	31.18	4.54	31.18	4.54	0.00	68.1
3F1	21.74	3.05	21.74	3.05	0.00	70.1
4F1	20.20	2.55	20.20	2.55	0.00	69.0

5C1	24.95	2.88	24.95	2.88	0.00	115.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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 -3.8
Superimposed Dead Load Moment -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

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	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	11.80	9.07	133.93		
		-112.26 R	-86.35	188.59	0.0	-100.93	-100.93	-77.64	176.98	157.85	
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00	0.00		
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00	0.00		
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00	0.00		
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00	0.00		
		-81.29 L	-62.53	162.59	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	13.40	1.19	12.16	1.36	HS 23.86	43.0
HS20	22.34	1.99	20.27	2.27	HS 39.77	71.6
2F1	33.22	4.33	30.15	4.95	0.00	65.0
3F1	23.16	2.91	21.02	3.33	0.00	66.9
4F1	21.52	2.44	19.53	2.79	0.00	65.8
5C1	26.59	2.75	24.13	3.14	0.00	109.8

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.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.9	-8.8	10.0

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-64.1	63.3
OPER	151.3	-106.8	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	-37.63	40.27	-28.95	30.98	-29.08	29.34	-22.37	22.57
OPER	HS20	-37.63	40.27	-28.95	30.98	-29.08	29.34	-22.37	22.57
OPER	2F1	-21.40	22.19	-16.46	17.07	0.00	0.00	0.00	0.00
OPER	3F1	-30.04	31.72	-23.11	24.40	0.00	0.00	0.00	0.00
OPER	4F1	-31.53	33.90	-24.26	26.07	0.00	0.00	0.00	0.00
OPER	5C1	-29.11	30.19	-22.39	23.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	1.70	1.57	HS 31.42	56.5
HS20	2.84	2.62	HS 52.36	94.2
2F1	4.99	4.75	0.00	71.3
3F1	3.56	3.32	0.00	76.4
4F1	3.39	3.11	0.00	84.0
5C1	3.67	3.49	0.00	139.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -3.8
Superimposed Dead Load Moment -41.7

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. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

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	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85
OPER	HS20	15.49 L	11.92	110.72	0.0	11.80	9.07	133.93	
		-112.26 R	-86.35	188.59	0.0	-100.93	-77.64	176.98	157.85
OPER	2F1	10.42 L	8.01	126.33	0.0	0.00	0.00	0.00	
		-51.52 R	-39.63	184.59	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.94 L	11.50	123.93	0.0	0.00	0.00	0.00	
		-76.75 L	-59.04	162.98	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.08 L	12.37	120.72	0.0	0.00	0.00	0.00	
		-91.60 L	-70.46	162.20	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.02 L	10.01	84.54	0.0	0.00	0.00	0.00	
		-81.29 L	-62.53	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.58	1.25	12.58	1.25	HS 25.01	45.0
HS20	20.97	2.08	20.97	2.08	HS 41.68	75.0
2F1	31.18	4.54	31.18	4.54	0.00	68.1
3F1	21.74	3.05	21.74	3.05	0.00	70.1
4F1	20.20	2.55	20.20	2.55	0.00	69.0

5C1	24.95	2.88	24.95	2.88	0.00	115.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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 -1.8
Superimposed Dead Load Moment -19.6

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	193.2	-148.3	174.0	-167.5
OPER	300.6C	-268.7	268.7	-300.6C	322.1	-247.2	290.1	-279.2

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	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81			
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77		
OPER	HS20	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81			
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77		
OPER	2F1	11.27 R	8.67	179.81	0.0	0.00	0.00	0.00			
		-34.99 L	-26.91	150.24	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 L	10.35	123.93	0.0	0.00	0.00	0.00			
		-50.20 L	-38.61	147.85	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.30 L	11.00	119.93	0.0	0.00	0.00	0.00			
		-54.01 L	-41.55	144.63	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	26.43 L	20.33	122.81	0.0	0.00	0.00	0.00			
		-48.78 R	-37.53	202.46	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	8.28	2.45	7.45	2.77	HS 49.07	88.3
HS20	13.79	4.09	12.42	4.62	HS 81.78	147.2
2F1	28.58	7.07	25.74	7.98	0.00	106.0
3F1	23.94	4.93	21.57	5.56	0.00	113.3
4F1	22.52	4.58	20.29	5.17	0.00	123.6
5C1	12.19	5.07	10.98	5.72	0.00	202.7

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.	8.100		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
0.8	0.0	8.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-75.3	64.3
OPER	151.3	-125.5	107.2

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	-0.62	35.84	-0.48	27.57	-1.38	26.94	-1.06	20.72
OPER	HS20	-0.62	35.84	-0.48	27.57	-1.38	26.94	-1.06	20.72
OPER	2F1	-0.44	20.44	-0.34	15.72	0.00	0.00	0.00	0.00
OPER	3F1	-0.62	28.72	-0.48	22.10	0.00	0.00	0.00	0.00
OPER	4F1	-0.67	30.04	-0.51	23.11	0.00	0.00	0.00	0.00
OPER	5C1	-0.94	27.19	-0.73	20.92	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	54.66	1.79	HS 35.90	64.6
HS20	91.11	2.99	HS 59.84	107.7
2F1	288.17	5.25	0.00	78.7
3F1	200.87	3.73	0.00	85.9
4F1	187.89	3.57	0.00	96.4
5C1	132.98	3.94	0.00	157.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100
HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment -1.8
Superimposed Dead Load Moment -19.6

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. 154.8	159.1	-176.2	159.1	-176.2	180.5	-154.8	180.5	-
OPER 258.0	279.4	-279.4	279.4	-279.4	300.8	-258.0	300.8	-

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	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81	
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77
OPER	HS20	11.67 L	8.97	105.93	0.0	23.35	17.96	169.81	
		-59.93 L	-46.10	148.63	0.0	-60.46	-46.51	157.85	181.77
OPER	2F1	11.27 R	8.67	179.81	0.0	0.00	0.00	0.00	
		-34.99 L	-26.91	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.35	123.93	0.0	0.00	0.00	0.00	
		-50.20 L	-38.61	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.30 L	11.00	119.93	0.0	0.00	0.00	0.00	
		-54.01 L	-41.55	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	26.43 L	20.33	122.81	0.0	0.00	0.00	0.00	
		-48.78 R	-37.53	202.46	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.73	2.56	7.73	2.56	HS 51.20	92.2
HS20	12.88	4.27	12.88	4.27	HS 85.34	153.6
2F1	26.70	7.37	26.70	7.37	0.00	110.6
3F1	22.37	5.14	22.37	5.14	0.00	118.2
4F1	21.04	4.78	21.04	4.78	0.00	129.0

5C1 11.38 5.29 11.38 5.29 0.00 211.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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. 8.200
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 +bend	top fiber -bend	bottom fiber +bend	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	270.4	-298.9

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	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20			
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02		
OPER	HS20	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20			
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02		
OPER	2F1	40.21 R	30.93	182.20	0.0	0.00	0.00	0.00			
		-31.10 L	-23.92	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	48.36 R	37.20	186.20	0.0	0.00	0.00	0.00			
		-44.62 L	-34.32	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	44.16 R	33.97	190.20	0.0	0.00	0.00	0.00			
		-48.01 L	-36.93	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.23 L	44.79	125.20	0.0	0.00	0.00	0.00			
		-42.00 L	-32.31	145.85	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	2.94	3.46	2.63	3.88	HS 52.59	94.7
HS20	4.90	5.77	4.38	6.46	HS 87.65	157.8
2F1	7.52	8.58	6.72	9.61	0.00	100.9
3F1	6.25	5.98	5.59	6.70	0.00	128.6
4F1	6.85	5.56	6.12	6.23	0.00	150.1
5C1	5.19	6.36	4.64	7.12	0.00	185.7

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

0.6	0.0	6.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.2	65.4
OPER	151.3	-123.7	109.0

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	-1.15	30.85	-0.88	23.73	-2.96	24.31	-2.28	18.70
OPER	HS20	-1.15	30.85	-0.88	23.73	-2.96	24.31	-2.28	18.70
OPER	2F1	-1.49	18.38	-1.14	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.20	25.31	-0.92	19.47	0.00	0.00	0.00	0.00
OPER	4F1	-0.67	25.80	-0.51	19.85	0.00	0.00	0.00	0.00
OPER	5C1	-2.56	23.87	-1.97	18.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.06	2.12	HS 42.41	76.3
HS20	41.76	3.53	HS 70.68	127.2
2F1	83.14	5.93	0.00	89.0
3F1	103.24	4.31	0.00	99.1
4F1	185.21	4.22	0.00	114.1
5C1	48.31	4.57	0.00	182.7

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 -0.2
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. 166.6	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
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 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	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20	
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02
OPER	HS20	61.69 R	47.46	200.20	0.0	46.48	35.76	172.20	
		-46.26 L	-35.58	134.63	0.0	-36.90	-28.38	157.85	110.02
OPER	2F1	40.21 R	30.93	182.20	0.0	0.00	0.00	0.00	
		-31.10 L	-23.92	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	48.36 R	37.20	186.20	0.0	0.00	0.00	0.00	
		-44.62 L	-34.32	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	44.16 R	33.97	190.20	0.0	0.00	0.00	0.00	
		-48.01 L	-36.93	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.23 L	44.79	125.20	0.0	0.00	0.00	0.00	
		-42.00 L	-32.31	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.73	3.60	2.73	3.60	HS 54.68	98.4
HS20	4.56	6.00	4.56	6.00	HS 91.13	164.0
2F1	6.99	8.93	6.99	8.93	0.00	104.9
3F1	5.81	6.22	5.81	6.22	0.00	133.7
4F1	6.37	5.78	6.37	5.78	0.00	156.2

5C1 4.83 6.61 4.83 6.61 0.00 193.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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 1.1
Superimposed Dead Load Moment 12.6

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	172.1	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	286.9	-282.4	254.9	-314.4

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	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59			
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02		
OPER	HS20	98.91 R	76.08	202.59	0.0	72.00	55.39	174.59			
		-40.48 L	-31.14	134.63	0.0	-32.23	-24.79	157.85	110.02		
OPER	2F1	63.71 R	49.01	184.59	0.0	0.00	0.00	0.00			
		-27.21 L	-20.93	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.13 R	62.41	188.59	0.0	0.00	0.00	0.00			
		-39.04 L	-30.03	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.23 R	63.25	188.59	0.0	0.00	0.00	0.00			
		-42.01 L	-32.32	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.63 L	64.33	127.59	0.0	0.00	0.00	0.00			
		-36.75 L	-28.27	145.85	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	4.19	1.55	4.66	HS 30.93	55.7
HS20	2.90	6.98	2.58	7.77	HS 51.55	92.8
2F1	4.50	10.38	4.00	11.55	0.00	60.0
3F1	3.54	7.23	3.14	8.05	0.00	72.3
4F1	3.49	6.72	3.10	7.48	0.00	83.7
5C1	3.43	7.68	3.05	8.55	0.00	121.9

SHEAR 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 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	-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	25.37	-2.55	19.52	-4.92	21.50	-3.79	16.54
OPER	HS20	-3.32	25.37	-2.55	19.52	-4.92	21.50	-3.79	16.54
OPER	2F1	-3.02	16.06	-2.32	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.21	21.53	-2.47	16.56	0.00	0.00	0.00	0.00
OPER	4F1	-2.34	22.18	-1.80	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.51	20.73	-3.47	15.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.86	2.62	HS 52.41	94.3
HS20	24.77	4.37	HS 87.35	157.2
2F1	40.35	6.90	0.00	103.5
3F1	37.94	5.15	0.00	118.4
4F1	52.02	5.00	0.00	134.9
5C1	27.02	5.35	0.00	213.9

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 1.1
Superimposed Dead Load Moment 12.6

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. 175.9	173.1	-162.1	173.1	-162.1	159.4	-175.9	159.4	-
OPER 293.1	279.4	-279.4	279.4	-279.4	265.7	-293.1	265.7	-

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	98.91 R	76.08	202.59	0.0	72.00	174.59	
		-40.48 L	-31.14	134.63	0.0	-32.23	157.85	110.02
OPER	HS20	98.91 R	76.08	202.59	0.0	72.00	174.59	
		-40.48 L	-31.14	134.63	0.0	-32.23	157.85	110.02
OPER	2F1	63.71 R	49.01	184.59	0.0	0.00	0.00	
		-27.21 L	-20.93	150.24	0.0	0.00	0.00	0.00
OPER	3F1	81.13 R	62.41	188.59	0.0	0.00	0.00	
		-39.04 L	-30.03	147.85	0.0	0.00	0.00	0.00
OPER	4F1	82.23 R	63.25	188.59	0.0	0.00	0.00	
		-42.01 L	-32.32	144.63	0.0	0.00	0.00	0.00
OPER	5C1	83.63 L	64.33	127.59	0.0	0.00	0.00	
		-36.75 L	-28.27	145.85	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	4.34	1.61	4.34	HS 32.23	58.0
HS20	2.69	7.24	2.69	7.24	HS 53.72	96.7
2F1	4.17	10.77	4.17	10.77	0.00	62.5
3F1	3.28	7.51	3.28	7.51	0.00	75.3
4F1	3.23	6.98	3.23	6.98	0.00	87.2

5C1	3.18	7.98	3.18	7.98	0.00	127.1
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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 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.	180.4C	-161.2	161.2	-180.4C	165.5	-176.1	146.3	-195.3
OPER	300.6C	-268.7	268.7	-300.6C	275.8	-293.5	243.8	-325.5

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	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98			
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00		
OPER	HS20	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98			
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00		
OPER	2F1	79.32 R	61.01	186.98	0.0	0.00	0.00	0.00			
		-23.33 L	-17.94	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.67 R	77.44	186.98	0.0	0.00	0.00	0.00			
		-33.46 L	-25.74	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.42 R	82.63	190.98	0.0	0.00	0.00	0.00			
		-36.01 L	-27.70	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	100.66 R	77.43	188.98	0.0	0.00	0.00	0.00			
		-31.50 L	-24.23	145.85	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	5.08	1.27	5.63	HS 25.43	45.8
HS20	2.40	8.46	2.12	9.38	HS 42.39	76.3
2F1	3.48	12.58	3.07	13.95	0.00	46.1
3F1	2.74	8.77	2.42	9.73	0.00	55.7
4F1	2.57	8.15	2.27	9.04	0.00	61.3
5C1	2.74	9.32	2.42	10.33	0.00	96.9

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.	8.400		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	-120.1	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	-7.37	20.41	-5.67	15.70	-7.23	18.56	-5.56	14.27
OPER	HS20	-7.37	20.41	-5.67	15.70	-7.23	18.56	-5.56	14.27
OPER	2F1	-4.85	13.51	-3.73	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-5.68	17.46	-4.37	13.43	0.00	0.00	0.00	0.00
OPER	4F1	-4.81	18.13	-3.70	13.95	0.00	0.00	0.00	0.00
OPER	5C1	-6.74	17.66	-5.18	13.59	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.78	3.31	HS 66.20	119.2
HS20	16.30	5.52	HS 110.33	198.6
2F1	24.74	8.33	0.00	125.0
3F1	21.13	6.45	0.00	148.3
4F1	24.97	6.21	0.00	167.7
5C1	17.84	6.38	0.00	255.0

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 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	-
INV. 182.6	177.6	-157.7	177.6	-157.7	152.7	-182.6	152.7	-
OPER 304.3	279.4	-279.4	279.4	-279.4	254.5	-304.3	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	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98	
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00
OPER	HS20	115.03 R	88.49	204.98	0.0	90.18	69.37	176.98	
		-34.69 L	-26.69	134.63	0.0	-26.42	-20.32	157.85	0.00
OPER	2F1	79.32 R	61.01	186.98	0.0	0.00	0.00	0.00	
		-23.33 L	-17.94	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.67 R	77.44	186.98	0.0	0.00	0.00	0.00	
		-33.46 L	-25.74	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.42 R	82.63	190.98	0.0	0.00	0.00	0.00	
		-36.01 L	-27.70	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	100.66 R	77.43	188.98	0.0	0.00	0.00	0.00	
		-31.50 L	-24.23	145.85	0.0	0.00	0.00	0.00	0.00

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	5.26	1.33	5.26	HS 26.55	47.8
HS20	2.21	8.77	2.21	8.77	HS 44.25	79.7
2F1	3.21	13.04	3.21	13.04	0.00	48.1
3F1	2.53	9.09	2.53	9.09	0.00	58.2
4F1	2.37	8.45	2.37	8.45	0.00	64.0

5C1 2.53 9.66 2.53 9.66 0.00 101.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.68	28.67	28.67	1.699	999999.000	91.040

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.77		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	11.96	1.00	33000.	73.86	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 2.6
Superimposed Dead Load Moment 29.1

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	161.4	-180.2	142.2	-199.4
OPER	300.6C	-268.7	268.7	-300.6C	268.9	-300.4	236.9	-332.3

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	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38			
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00		
OPER	HS20	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38			
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00		
OPER	2F1	84.95 R	65.35	189.38	0.0	0.00	0.00	0.00			
		-19.44 L	-14.95	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.12 L	88.55	169.38	0.0	0.00	0.00	0.00			
		-27.89 L	-21.45	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	122.96 R	94.59	193.38	0.0	0.00	0.00	0.00			
		-30.01 L	-23.08	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.86 R	84.51	230.38	0.0	0.00	0.00	0.00			
		-26.25 L	-20.19	145.85	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	1.28	6.23	1.12	6.90	HS 22.49	40.5
HS20	2.13	10.39	1.88	11.49	HS 37.49	67.5
2F1	3.17	15.45	2.79	17.10	0.00	41.8
3F1	2.34	10.77	2.06	11.92	0.00	47.3
4F1	2.19	10.01	1.93	11.08	0.00	52.0
5C1	2.45	11.44	2.16	12.66	0.00	86.3

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.	8.500		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	-10.57	17.10	-8.13	13.16	-9.87	15.53	-7.59	11.95
OPER	HS20	-10.57	17.10	-8.13	13.16	-9.87	15.53	-7.59	11.95
OPER	2F1	-6.97	10.79	-5.36	8.30	0.00	0.00	0.00	0.00
OPER	3F1	-8.59	14.22	-6.61	10.94	0.00	0.00	0.00	0.00
OPER	4F1	-7.79	14.12	-6.00	10.87	0.00	0.00	0.00	0.00
OPER	5C1	-9.17	14.74	-7.05	11.34	0.00	0.00	0.00	0.00

Veh.	Rating Shear			
	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.72	4.01	HS 80.28	144.5
HS20	11.19	6.69	HS 133.80	240.8
2F1	16.97	10.61	0.00	159.1
3F1	13.78	8.05	0.00	185.0
4F1	15.18	8.10	0.00	218.7
5C1	12.90	7.76	0.00	310.6

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 2.6
Superimposed Dead Load Moment 29.1

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. 186.7	180.3	-155.0	180.3	-155.0	148.6	-186.7	148.6	-
OPER 311.1	279.4	-279.4	279.4	-279.4	247.7	-311.1	247.7	-

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	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38	
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00
OPER	HS20	126.40 R	97.23	207.38	0.0	101.45	78.03	179.38	
		-28.91 L	-22.24	134.63	0.0	-22.01	-16.93	157.85	0.00
OPER	2F1	84.95 R	65.35	189.38	0.0	0.00	0.00	0.00	
		-19.44 L	-14.95	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.12 L	88.55	169.38	0.0	0.00	0.00	0.00	
		-27.89 L	-21.45	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	122.96 R	94.59	193.38	0.0	0.00	0.00	0.00	
		-30.01 L	-23.08	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.86 R	84.51	230.38	0.0	0.00	0.00	0.00	
		-26.25 L	-20.19	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.18	6.46	1.18	6.46	HS 23.51	42.3
HS20	1.96	10.76	1.96	10.76	HS 39.19	70.5
2F1	2.92	16.00	2.92	16.00	0.00	43.7
3F1	2.15	11.16	2.15	11.16	0.00	49.5
4F1	2.01	10.37	2.01	10.37	0.00	54.4

5C1	2.26	11.85	2.26	11.85	0.00	90.2
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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		Dc	b max	b min	t	ry	
	Depth	Thk.						
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

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

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Bending		Negative Bending		
Top	Bott.	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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 2.8
Superimposed Dead Load Moment 31.2

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	160.0	-181.6	140.8	-200.8
OPER	300.6C	-268.7	268.7	-300.6C	266.7	-302.6	234.7	-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	131.09	R	100.84	195.77	0.0	102.53	78.87	181.77		
		-23.13	L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00	
OPER	HS20	131.09	R	100.84	195.77	0.0	102.53	78.87	181.77		
		-23.13	L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00	
OPER	2F1	89.41	L	68.77	171.77	0.0	0.00	0.00	0.00		
		-15.55	L	-11.96	150.24	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	118.12	L	90.86	171.77	0.0	0.00	0.00	0.00		
		-22.31	L	-17.16	147.85	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	126.02	L	96.94	167.77	0.0	0.00	0.00	0.00		
		-24.01	L	-18.47	144.63	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	113.03	R	86.95	228.77	0.0	0.00	0.00	0.00		
		-21.00	L	-16.16	145.85	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	1.22	7.85	1.07	8.68	HS 21.49	38.7
HS20	2.03	13.08	1.79	14.47	HS 35.81	64.5
2F1	2.98	19.46	2.62	21.52	0.00	39.4
3F1	2.26	13.56	1.99	15.00	0.00	45.7
4F1	2.12	12.60	1.86	13.94	0.00	50.3
5C1	2.36	14.41	2.08	15.93	0.00	83.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S03

Check Point I. D.

8.600

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
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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	-13.70	13.19	-10.54	10.15	-12.82	12.46	-9.86	9.59
OPER	HS20	-13.70	13.19	-10.54	10.15	-12.82	12.46	-9.86	9.59
OPER	2F1	-9.35	8.10	-7.19	6.23	0.00	0.00	0.00	0.00
OPER	3F1	-11.89	10.98	-9.15	8.45	0.00	0.00	0.00	0.00
OPER	4F1	-11.77	10.00	-9.05	7.70	0.00	0.00	0.00	0.00
OPER	5C1	-11.82	11.94	-9.09	9.19	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.10	5.29	HS 101.95	183.5
HS20	8.50	8.82	HS 169.91	305.8
2F1	12.46	14.36	0.00	186.8
3F1	9.79	10.59	0.00	225.1
4F1	9.89	11.63	0.00	267.0
5C1	9.85	9.74	0.00	389.6

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 2.8
Superimposed Dead Load Moment 31.2

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. 188.0	181.2	-154.1	181.2	-154.1	147.3	-188.0	147.3	-
OPER 313.3	279.4	-279.4	279.4	-279.4	245.5	-313.3	245.5	-

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	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77	
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00
OPER	HS20	131.09 R	100.84	195.77	0.0	102.53	78.87	181.77	
		-23.13 L	-17.79	134.63	0.0	-17.61	-13.55	157.85	0.00
OPER	2F1	89.41 L	68.77	171.77	0.0	0.00	0.00	0.00	
		-15.55 L	-11.96	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	118.12 L	90.86	171.77	0.0	0.00	0.00	0.00	
		-22.31 L	-17.16	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.02 L	96.94	167.77	0.0	0.00	0.00	0.00	
		-24.01 L	-18.47	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	113.03 R	86.95	228.77	0.0	0.00	0.00	0.00	
		-21.00 L	-16.16	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.12	8.13	1.12	8.13	HS 22.47	40.4
HS20	1.87	13.55	1.87	13.55	HS 37.45	67.4
2F1	2.74	20.15	2.74	20.15	0.00	41.2
3F1	2.08	14.05	2.08	14.05	0.00	47.8
4F1	1.95	13.05	1.95	13.05	0.00	52.6

5C1	2.17	14.92	2.17	14.92	0.00	86.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 2.6
Superimposed Dead Load Moment 29.3

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	161.2	-180.3	142.1	-199.5
OPER	300.6C	-268.7	268.7	-300.6C	268.7	-300.6	236.8	-332.5

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	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16			
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00		
OPER	HS20	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16			
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00		
OPER	2F1	85.62 L	65.86	174.16	0.0	0.00	0.00	0.00			
		-11.66 L	-8.97	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.73 L	85.95	170.16	0.0	0.00	0.00	0.00			
		-16.73 L	-12.87	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	115.66 L	88.97	170.16	0.0	0.00	0.00	0.00			
		-18.00 L	-13.85	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	108.35 L	83.35	168.16	0.0	0.00	0.00	0.00			
		-15.75 L	-12.12	145.85	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	1.23	10.40	1.08	11.50	HS 21.66	39.0
HS20	2.05	17.33	1.80	19.17	HS 36.09	65.0
2F1	3.14	25.77	2.77	28.51	0.00	41.5
3F1	2.40	17.96	2.12	19.87	0.00	48.7
4F1	2.32	16.69	2.05	18.47	0.00	55.3
5C1	2.48	19.08	2.18	21.11	0.00	87.4

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.	8.700		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.1	-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	-18.28	9.87	-14.06	7.59	-16.05	9.40	-12.35	7.23
OPER	HS20	-18.28	9.87	-14.06	7.59	-16.05	9.40	-12.35	7.23
OPER	2F1	-11.93	6.17	-9.18	4.75	0.00	0.00	0.00	0.00
OPER	3F1	-15.57	7.60	-11.98	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.37	6.26	-11.82	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.10	9.00	-11.62	6.92	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.76	7.18	HS 75.22	135.4
HS20	6.27	11.97	HS 125.37	225.7
2F1	9.60	19.14	0.00	144.1
3F1	7.36	15.55	0.00	169.3
4F1	7.46	18.88	0.00	201.4
5C1	7.59	13.12	0.00	303.6

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 2.6
Superimposed Dead Load Moment 29.3

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	-
bend								
INV. 186.8	180.4	-154.9	180.4	-154.9	148.5	-186.8	148.5	-
OPER 311.3	279.4	-279.4	279.4	-279.4	247.5	-311.3	247.5	-

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	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16	
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00
OPER	HS20	131.19 R	100.92	198.16	0.0	94.42	72.63	184.16	
		-17.35 L	-13.34	134.63	0.0	-13.21	-10.16	157.85	0.00
OPER	2F1	85.62 L	65.86	174.16	0.0	0.00	0.00	0.00	
		-11.66 L	-8.97	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.73 L	85.95	170.16	0.0	0.00	0.00	0.00	
		-16.73 L	-12.87	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	115.66 L	88.97	170.16	0.0	0.00	0.00	0.00	
		-18.00 L	-13.85	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	108.35 L	83.35	168.16	0.0	0.00	0.00	0.00	
		-15.75 L	-12.12	145.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.13	10.77	1.13	10.77	HS 22.64	40.8
HS20	1.89	17.94	1.89	17.94	HS 37.73	67.9
2F1	2.89	26.69	2.89	26.69	0.00	43.4
3F1	2.21	18.60	2.21	18.60	0.00	50.9
4F1	2.14	17.29	2.14	17.29	0.00	57.8

5C1	2.28	19.76	2.28	19.76	0.00	91.4
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 2.1
Superimposed Dead Load Moment 23.5

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	165.0	-176.5	145.9	-195.7
OPER	300.6C	-268.7	268.7	-300.6C	275.1	-294.2	243.1	-326.2

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	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55			
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00		
OPER	HS20	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55			
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00		
OPER	2F1	70.29 L	54.07	176.55	0.0	0.00	0.00	0.00			
		-7.78 L	-5.98	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.58 L	71.99	172.55	0.0	0.00	0.00	0.00			
		-11.15 L	-8.58	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.18 L	71.68	168.55	0.0	0.00	0.00	0.00			
		-12.00 L	-9.23	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.77 L	69.82	170.55	0.0	0.00	0.00	0.00			
		-10.50 L	-8.08	145.85	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	1.48	15.26	1.30	16.92	HS 26.10	47.0
HS20	2.46	25.44	2.17	28.21	HS 43.49	78.3
2F1	3.91	37.84	3.46	41.95	0.00	51.9
3F1	2.94	26.38	2.60	29.24	0.00	59.7
4F1	2.95	24.51	2.61	27.18	0.00	70.4
5C1	3.03	28.02	2.68	31.06	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.

8.800

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.3	-3.3	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	-23.37	6.65	-17.98	5.12	-19.54	6.39	-15.03	4.92
OPER	HS20	-23.37	6.65	-17.98	5.12	-19.54	6.39	-15.03	4.92
OPER	2F1	-14.70	4.16	-11.30	3.20	0.00	0.00	0.00	0.00
OPER	3F1	-19.56	4.12	-15.05	3.17	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.39	-14.99	2.61	0.00	0.00	0.00	0.00
OPER	5C1	-18.98	5.90	-14.60	4.54	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.90	10.81	HS 57.93	104.3
HS20	4.83	18.03	HS 96.55	173.8
2F1	7.68	28.84	0.00	115.2
3F1	5.77	29.13	0.00	132.6
4F1	5.79	35.37	0.00	156.4
5C1	5.95	20.33	0.00	237.8

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 2.1
Superimposed Dead Load Moment 23.5

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. 183.0	177.9	-157.4	177.9	-157.4	152.3	-183.0	152.3	-
OPER 305.0	279.4	-279.4	279.4	-279.4	253.8	-305.0	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 Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55	
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00
OPER	HS20	111.79 R	85.99	200.55	0.0	74.30	57.16	186.55	
		-11.56 L	-8.90	134.63	0.0	-8.81	-6.77	157.85	0.00
OPER	2F1	70.29 L	54.07	176.55	0.0	0.00	0.00	0.00	
		-7.78 L	-5.98	150.24	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.58 L	71.99	172.55	0.0	0.00	0.00	0.00	
		-11.15 L	-8.58	147.85	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.18 L	71.68	168.55	0.0	0.00	0.00	0.00	
		-12.00 L	-9.23	144.63	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.77 L	69.82	170.55	0.0	0.00	0.00	0.00	
		-10.50 L	-8.08	145.85	0.0	0.00	0.00	0.00	0.00

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	15.82	1.36	15.82	HS 27.25	49.0
HS20	2.27	26.37	2.27	26.37	HS 45.41	81.7
2F1	3.61	39.22	3.61	39.22	0.00	54.2
3F1	2.71	27.34	2.71	27.34	0.00	62.4
4F1	2.72	25.41	2.72	25.41	0.00	73.6

5C1	2.80	29.04	2.80	29.04	0.00	111.9
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 13.7

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	171.4	-170.1	152.2	-189.3
OPER	300.6C	-268.7	268.7	-300.6C	285.7	-283.6	253.7	-315.6

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	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94			
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00		
OPER	HS20	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94			
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85	0.00		
OPER	2F1	42.08 L	32.37	178.94	0.0	0.00	0.00	0.00			
		-3.89 L	-2.99	150.24	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.95 L	43.80	174.94	0.0	0.00	0.00	0.00			
		-5.58 L	-4.29	147.85	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	57.76 L	44.43	170.94	0.0	0.00	0.00	0.00			
		-6.00 L	-4.62	144.63	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	55.29 L	42.53	172.94	0.0	0.00	0.00	0.00			
		-5.25 L	-4.04	145.85	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	2.48	29.42	2.20	32.74	HS 44.09	79.4
HS20	4.14	49.04	3.67	54.57	HS 73.48	132.3
2F1	6.79	72.94	6.03	81.17	0.00	90.4
3F1	5.02	50.85	4.46	56.58	0.00	102.5
4F1	4.95	47.25	4.39	52.58	0.00	118.6
5C1	5.17	54.01	4.59	60.10	0.00	183.6

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

-0.4 -4.9 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.6	73.0
OPER	151.3	-111.0	121.7

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	-28.88	3.35	-22.21	2.58	-23.25	3.47	-17.88	2.67
OPER	HS20	-28.88	3.35	-22.21	2.58	-23.25	3.47	-17.88	2.67
OPER	2F1	-17.59	2.09	-13.53	1.61	0.00	0.00	0.00	0.00
OPER	3F1	-23.81	2.33	-18.32	1.79	0.00	0.00	0.00	0.00
OPER	4F1	-24.15	2.49	-18.58	1.92	0.00	0.00	0.00	0.00
OPER	5C1	-23.12	3.82	-17.78	2.94	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.31	21.06	HS 46.14	83.1
HS20	3.85	35.09	HS 76.90	138.4
2F1	6.31	58.17	0.00	94.7
3F1	4.66	52.19	0.00	107.2
4F1	4.60	48.82	0.00	124.1
5C1	4.80	31.87	0.00	192.1

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 13.7

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. 176.6	173.6	-161.7	173.6	-161.7	158.7	-176.6	158.7	-
OPER 294.3	279.4	-279.4	279.4	-279.4	264.5	-294.3	264.5	-

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	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85
OPER	HS20	69.06 R	53.12	202.94	0.0	43.62	33.55	188.94
		-5.78 L	-4.45	134.63	0.0	-4.40	-3.39	157.85
OPER	2F1	42.08 L	32.37	178.94	0.0	0.00	0.00	0.00
		-3.89 L	-2.99	150.24	0.0	0.00	0.00	0.00
OPER	3F1	56.95 L	43.80	174.94	0.0	0.00	0.00	0.00
		-5.58 L	-4.29	147.85	0.0	0.00	0.00	0.00
OPER	4F1	57.76 L	44.43	170.94	0.0	0.00	0.00	0.00
		-6.00 L	-4.62	144.63	0.0	0.00	0.00	0.00
OPER	5C1	55.29 L	42.53	172.94	0.0	0.00	0.00	0.00
		-5.25 L	-4.04	145.85	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	2.30	30.54	2.30	30.54	HS 45.96	82.7
HS20	3.83	50.90	3.83	50.90	HS 76.59	137.9
2F1	6.28	75.71	6.28	75.71	0.00	94.3
3F1	4.64	52.77	4.64	52.77	0.00	106.8
4F1	4.58	49.04	4.58	49.04	0.00	123.6

5C1	4.78	56.06	4.78	56.06	0.00	191.3
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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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	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	11.96	1.00	33000.	73.86	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 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

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.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load Shear	Superimposed (-) Shear	Dead Load (+) Shear
-0.6	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.5	70.2
OPER	151.3	-109.2	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	-34.71	0.00	-26.70	0.00	-27.16	2.36	-20.89	1.82
OPER	HS20	-34.71	0.00	-26.70	0.00	-27.16	2.36	-20.89	1.82
OPER	2F1	-20.59	0.00	-15.84	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.25	0.00	-21.73	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.10	0.00	-22.39	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.46	0.00	-21.13	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	29.72	HS 37.76	68.0
HS20	3.15	49.53	HS 62.93	113.3
2F1	5.31	999.00	0.00	79.6
3F1	3.87	999.00	0.00	88.9
4F1	3.75	999.00	0.00	101.3
5C1	3.98	999.00	0.00	159.1

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 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

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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