

BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1

Floor Beam Spacing 25.00

Comments:

Member I. D. B01 Symmetry:

Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5
	38.833	0.000	0.000	0.000	0.000

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.5	33.38	0.880	bott	16.78	16.59	16.59	1.57	3.81
				16.78	16.59	16.59	1.57	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 Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
82.40	82.40	18.35	18.35	18900.0	18900.0
n= 8 153.01	153.01	6.53	30.17	44476.4	18900.0
3n= 24 105.94	105.94	12.66	24.04	31119.4	18900.0

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
n= 8	1030.0	1030.0	1030.0	1030.0	3189.36
	6808.7	1474.4	1030.0	1030.0	
3n= 24	2458.2	1294.5	1030.0	1030.0	

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	7.85	1.57	10.570	0.01	0.00	37.72	18.96
bott	7.85	1.57	10.570	84.00	22.03		18.96

ASD - Moment Values

Cb	Iy	J	fb
top	bott		top
1.75	597.93	597.93	50.526
			0.000
			1141.252

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3189.36	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
2694.44	2836.95	9.81	0.00	0.00	0.000	5021.15

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	565.4

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 Superimposed Dead Load
 Moment Moment
 52.7 229.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3012.7C	-1699.5	2432.7	-1913.6C	2148.4	-1476.4	1702.2	-1641.1
OPER	5021.2C	-2832.5	4054.5	-3189.4C	3580.6	-2460.7	2837.0	-2735.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	866.70 R	666.69	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	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	3F1	687.64 R	528.96	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	726.76 R	559.05	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	669.59 R	515.07	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.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.48	999.00	1.96	999.00
HS20	4.13	999.00	3.27	999.00
2F1	7.32	999.00	5.80	999.00
3F1	5.21	999.00	4.13	999.00
4F1	4.93	999.00	3.90	999.00
5C1	5.35	999.00	4.24	999.00

Rating Value	Load Capacity (tons)
HS 39.28	70.7
HS 65.47	117.8
0.00	87.0
0.00	94.9
0.00	105.4
0.00	169.5

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	339.3	-261.0	261.0
OPER	565.4	-434.9	434.9

Live Load Effect

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

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

Rating

Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

52.7 229.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 783.6	10364.7	-1501.8	2391.0	-1501.8	10082.8	-1783.6	2109.2	-1
OPER 972.7	17086.6	-2690.9	3797.2	-2690.9	16804.7	-2972.7	3515.3	-2

Live Load Effect

Impact Factors: +bend - .300 -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	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	HS20	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	2F1	489.02 R	376.17	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	3F1	687.64 R	528.96	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	726.76 R	559.05	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.63	999.00	2.43	999.00	HS 48.67	87.6
HS20	19.39	999.00	4.06	999.00	HS 81.12	146.0
2F1	34.36	999.00	7.19	999.00	0.00	107.8
3F1	24.44	999.00	5.11	999.00	0.00	117.6
4F1	23.12	999.00	4.84	999.00	0.00	130.6

5C1	25.10	999.00	5.25	999.00	0.00	210.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1

Floor Beam Spacing 25.00

Comments:

Member I. D. B02 Symmetry:

Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5
	38.833	0.000	0.000	0.000	0.000

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.7	33.38	0.940	bott	16.61	16.66	16.66	1.68	3.83
				16.61	16.66	16.66	1.68	3.83

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

Section Gross	Area Net	Neutral Axis Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
88.30	88.30	18.29	18.29	20300.0	20300.0
n= 8 241.21	241.21	2.10	34.48	58212.2	20300.0
3n= 24 139.27	139.27	8.94	27.63	41844.6	20300.0

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
Positive Top	Bending Bott.	Negative Top	Bending Bott.		
1110.0	1110.0	1110.0	1110.0	3414.56	
n= 8 27733.7	1688.4	1110.0	1110.0		
3n= 24 4679.6	1514.2	1110.0	1110.0		

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	1.68	9.910	0.01	0.00	35.32	17.57
bott	7.86	1.68	9.910	84.00	21.93		17.57

ASD - Moment Values

Cb	Iy	J	fb
top	bott		top
1.75	646.79	62.038	1154.798

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3414.56	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
2887.66	5353.93	4.97	0.00	0.00	0.000	6164.88

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	603.8

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 56.5 548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3698.9C	-1831.5	2785.9	-2048.7C	2482.3	-1771.9	1779.9	-1939.0
OPER	6164.9C	-3052.5	4643.1	-3414.6C	4137.2	-2953.1	2966.6	-3231.6

Live Load Effect

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

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

Moment

Rating Veh.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.66	999.00	1.91	999.00
HS20	4.43	999.00	3.18	999.00
2F1	8.46	999.00	6.07	999.00
3F1	5.72	999.00	4.10	999.00
4F1	5.14	999.00	3.68	999.00
5C1	5.86	999.00	4.20	999.00

Rating Value	Load Capacity (tons)
HS 38.16	68.7
HS 63.60	114.5
0.00	91.0
0.00	94.3
0.00	99.5
0.00	168.1

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	362.3	-278.7	278.7
OPER	603.8	-464.4	464.4

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. B02
 Check Point I. D. 1.474

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 56.5 548.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 103.0	41280.0	-1497.9	2833.1	-1497.9	40675.0	-2103.0	2228.0	-2
OPER 504.9	68396.7	-2899.9	4318.4	-2899.9	67791.7	-3504.9	3713.4	-3

Live Load Effect

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

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

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	43.60	999.00	2.39	999.00	HS 47.77	86.0
HS20	72.67	999.00	3.98	999.00	HS 79.61	143.3
2F1	138.63	999.00	7.59	999.00	0.00	113.9
3F1	93.67	999.00	5.13	999.00	0.00	118.0
4F1	84.21	999.00	4.61	999.00	0.00	124.5

5C1	96.06	999.00	5.26	999.00	0.00	210.5
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction CSC
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 1

Floor Beam Spacing 25.00

Comments:

Member I. D. B03 Symmetry:

Span Length:	Span 1	Span 2	Span 3	Span 4	Span 5
	38.833	0.000	0.000	0.000	0.000

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.5	33.38	0.880	bott	16.78	16.59	16.59	1.57	3.81
				16.78	16.59	16.59	1.57	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	Dy	Reinf. Fy
116.50	10.50	7.25	11.2	5.8	60000.

Section Gross	Area Net	Neutral Axis Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
82.40	82.40	18.35	18.35	18900.0	18900.0
n= 8 235.31	235.31	1.71	34.98	55394.8	18900.0
3n= 24 133.37	133.37	8.57	28.13	40005.0	18900.0

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
	1030.0	1030.0	1030.0	1030.0	3189.36
n= 8	32309.8	1583.4	1030.0	1030.0	
3n= 24	4670.0	1422.0	1030.0	1030.0	

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	7.85	1.57	10.570	0.01	0.00	37.72	18.96
bott	7.85	1.57	10.570	84.00	22.03		18.96

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	597.93	597.93	50.526
			0.000
			1141.252

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3189.36	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
2694.44	5353.93	4.53	0.00	0.00	0.000	5751.78

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	565.4

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 Superimposed Dead Load Moment
 52.7 494.8

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.	3451.1C	-1699.5	2612.6	-1913.6C	2326.2	-1635.8	1681.2	-1800.5
OPER	5751.8C	-2832.5	4354.4	-3189.4C	3877.0	-2726.3	2802.0	-3000.8

Live Load Effect

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

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

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.49	999.00	1.80	999.00
HS20	4.16	999.00	3.00	999.00
2F1	7.93	999.00	5.73	999.00
3F1	5.36	999.00	3.87	999.00
4F1	4.82	999.00	3.48	999.00
5C1	5.49	999.00	3.97	999.00

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	339.3	-261.0	261.0
OPER	565.4	-434.9	434.9

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 52.7 494.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 943.0	48147.1	-1395.5	2650.3	-1395.5	47599.6	-1943.0	2102.8	-1
OPER 238.4	79880.1	-2690.9	4052.2	-2690.9	79332.6	-3238.4	3504.7	-3

Live Load Effect

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

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

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	51.02	999.00	2.25	999.00	HS 45.08	81.1
HS20	85.04	999.00	3.76	999.00	HS 75.13	135.2
2F1	162.23	999.00	7.17	999.00	0.00	107.5
3F1	109.61	999.00	4.84	999.00	0.00	111.4
4F1	98.55	999.00	4.35	999.00	0.00	117.5

5C1	112.42	999.00	4.97	999.00	0.00	198.7
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D. S01 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

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

Superimposed Dead Load:

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

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 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	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

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

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

Moment

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

0.7	0.0	7.6
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.4	74.4
OPER	172.1	-140.7	124.0

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.0 0.0

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live w/imp.	Load 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	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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 16.7

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

1.100

HS20 HS20

2F1

3F1

4F1

5C1

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

0.6

0.0

5.7

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

Live Load Effect

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

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

Rating

Shear

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

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01

Check Point I. D. 1.100

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6

Superimposed Dead Load Moment 16.7

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50	
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00
OPER	HS20	66.91 L	51.47	-11.50	0.0	41.79	32.15	2.50	
		-6.25 R	-4.81	58.00	0.0	-4.62	-3.55	35.00	0.00
OPER	2F1	40.11 R	30.86	12.50	0.0	0.00	0.00	0.00	
		-4.08 R	-3.14	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.73 R	42.10	16.50	0.0	0.00	0.00	0.00	
		-5.86 R	-4.51	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.94 R	43.03	20.50	0.0	0.00	0.00	0.00	
		-6.35 R	-4.89	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.15 R	40.89	18.50	0.0	0.00	0.00	0.00	
		-5.54 R	-4.26	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

5C1	5.91	63.25	5.91	63.25	0.00	236.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 28.5

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

0.4	0.0	3.8
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-81.9	76.9
OPER	172.1	-136.5	128.2

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 28.5

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	HS20	108.85 L	83.73	-9.00	0.0	71.41	54.93	5.00	
		-12.51 R	-9.62	58.00	0.0	-9.24	-7.11	35.00	0.00
OPER	2F1	67.31 R	51.78	15.00	0.0	0.00	0.00	0.00	
		-8.15 R	-6.27	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.42 R	69.55	19.00	0.0	0.00	0.00	0.00	
		-11.73 R	-9.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.72 R	69.79	23.00	0.0	0.00	0.00	0.00	
		-12.70 R	-9.77	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.66 R	67.43	21.00	0.0	0.00	0.00	0.00	
		-11.08 R	-8.52	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 35.6

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

Live Load Effect

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

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

Moment

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

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

0.2	0.0	1.9
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-80.7	78.2
OPER	172.1	-134.4	130.3

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment 3.5
 Superimposed Dead Load Moment 35.6

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50	
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00
OPER	HS20	128.35 L	98.73	-6.50	0.0	91.13	70.10	7.50	
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00
OPER	2F1	82.40 R	63.39	17.50	0.0	0.00	0.00	0.00	
		-12.23 R	-9.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.59 R	83.53	21.50	0.0	0.00	0.00	0.00	
		-17.59 R	-13.53	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.33 R	87.18	21.50	0.0	0.00	0.00	0.00	
		-19.06 R	-14.66	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.12 R	80.86	23.50	0.0	0.00	0.00	0.00	
		-16.62 R	-12.79	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 38.0

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

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

Live Load Effect

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

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

Rating

Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 38.0

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00	
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00
OPER	HS20	128.61 L	98.93	-4.00	0.0	99.47	76.51	10.00	
		-25.02 R	-19.25	58.00	0.0	-18.49	-14.22	35.00	0.00
OPER	2F1	86.55 R	66.58	20.00	0.0	0.00	0.00	0.00	
		-16.31 R	-12.54	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.46 R	88.82	20.00	0.0	0.00	0.00	0.00	
		-23.46 R	-18.05	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	123.73 R	95.18	24.00	0.0	0.00	0.00	0.00	
		-25.41 R	-19.54	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	110.37 R	84.90	22.00	0.0	0.00	0.00	0.00	
		-22.16 R	-17.05	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 35.5

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

Live Load Effect

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

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

Moment

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

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

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

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 35.5

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

Live Load Effect

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

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

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 28.1

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

-0.4	-3.9	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.9	82.0
OPER	172.1	-128.1	136.7

Live Load Effect

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

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

Rating

Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 28.1

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00	
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00
OPER	HS20	115.16 L	88.59	-13.00	0.0	88.90	68.38	15.00	
		-37.53 R	-28.87	58.00	0.0	-27.73	-21.33	35.00	0.00
OPER	2F1	77.81 L	59.86	5.00	0.0	0.00	0.00	0.00	
		-24.46 R	-18.81	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 L	77.18	5.00	0.0	0.00	0.00	0.00	
		-35.19 R	-27.07	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.73 L	82.87	1.00	0.0	0.00	0.00	0.00	
		-38.11 R	-29.32	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.63 L	75.87	3.00	0.0	0.00	0.00	0.00	
		-33.25 R	-25.57	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment Superimposed Dead Load Moment
 1.7 15.9

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

-0.5	-5.8	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.6	83.2
OPER	172.1	-126.0	138.7

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.7 15.9

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50	
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00
OPER	HS20	99.53 L	76.56	-10.50	0.0	71.95	55.35	17.50	
		-43.78 R	-33.68	58.00	0.0	-33.80	-26.00	35.00	85.00
OPER	2F1	63.30 L	48.69	7.50	0.0	0.00	0.00	0.00	
		-28.54 R	-21.95	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.80 L	62.93	3.50	0.0	0.00	0.00	0.00	
		-41.05 R	-31.58	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.88 L	64.52	3.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.06 R	62.36	64.50	0.0	0.00	0.00	0.00	
		-38.79 R	-29.84	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 -1.1

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.7	0.0

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

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

0.1 -1.1

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00	85.00
OPER	HS20	63.96 L	49.20	-8.00	0.0	47.55	36.58	20.00	
		-50.04 R	-38.49	58.00	0.0	-38.63	-29.72	35.00	85.00
OPER	2F1	41.11 L	31.62	10.00	0.0	0.00	0.00	0.00	
		-32.61 R	-25.09	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	50.94 L	39.18	6.00	0.0	0.00	0.00	0.00	
		-46.92 R	-36.09	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.57 L	36.59	2.00	0.0	0.00	0.00	0.00	
		-50.81 R	-39.09	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.56 R	45.05	67.00	0.0	0.00	0.00	0.00	
		-44.33 R	-34.10	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

5C1	5.69	7.47	5.69	7.47	0.00	227.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -2.0 -22.8

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

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

Live Load Effect

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

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

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -22.8

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50	
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00
OPER	HS20	12.56 R	9.66	88.00	0.0	23.61	18.16	22.50	
		-62.02 L	-47.71	16.00	0.0	-57.83	-44.49	35.00	10.00
OPER	2F1	13.37 L	10.28	12.50	0.0	0.00	0.00	0.00	
		-36.69 R	-28.22	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.14 R	10.88	70.00	0.0	0.00	0.00	0.00	
		-52.78 R	-40.60	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.10 R	11.61	74.00	0.0	0.00	0.00	0.00	
		-57.17 R	-43.97	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.41 R	22.62	69.50	0.0	0.00	0.00	0.00	
		-52.01 L	-40.01	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

5C1	12.14	5.91	12.14	5.91	0.00	236.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

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

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	-32.71	34.96	-25.16	26.89	-24.40	26.43	-18.77	20.33
OPER	HS20	-32.71	34.96	-25.16	26.89	-24.40	26.43	-18.77	20.33
OPER	2F1	-18.39	19.64	-14.15	15.11	0.00	0.00	0.00	0.00
OPER	3F1	-25.94	27.65	-19.96	21.27	0.00	0.00	0.00	0.00
OPER	4F1	-27.32	29.22	-21.02	22.48	0.00	0.00	0.00	0.00
OPER	5C1	-24.64	26.83	-18.95	20.64	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00	
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00	
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00	
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00	
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

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

Live Load Effect

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

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

Rating

Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	HS20	16.76 R	12.89	83.00	0.0	12.38	9.53	60.00	
		-103.95 L	-79.96	4.50	0.0	-95.84	-73.73	15.00	35.00
OPER	2F1	10.92 R	8.40	67.50	0.0	0.00	0.00	0.00	
		-44.89 L	-34.53	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 R	12.09	70.00	0.0	0.00	0.00	0.00	
		-67.21 R	-51.70	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 R	13.09	73.00	0.0	0.00	0.00	0.00	
		-81.02 R	-62.32	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 R	10.01	109.50	0.0	0.00	0.00	0.00	
		-73.62 L	-56.63	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

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

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

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -2.6 -26.5

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

Live Load Effect

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

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

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	2F1	-2.04	17.51	-1.57	13.47	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	24.31	-2.25	18.70	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	25.22	-2.43	19.40	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	23.53	-2.43	18.10	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.09	2.13	HS 42.63	76.7
HS20	41.81	3.55	HS 71.06	127.9
2F1	61.47	6.14	0.00	92.1
3F1	42.73	4.42	0.00	101.7
4F1	39.60	4.26	0.00	115.1
5C1	39.59	4.57	0.00	182.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -26.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 150.2	156.0	-179.3	156.0	-179.3	185.1	-150.2	185.1	-
OPER 250.3	279.4	-279.4	279.4	-279.4	308.5	-250.3	308.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50	
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50
OPER	HS20	15.19 R	11.69	55.50	0.0	21.49	16.53	27.50	
		-67.93 R	-52.25	34.00	0.0	-58.59	-45.07	15.00	37.50
OPER	2F1	12.95 R	9.96	37.50	0.0	0.00	0.00	0.00	
		-39.20 L	-30.15	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	9.59 R	7.38	41.50	0.0	0.00	0.00	0.00	
		-56.39 L	-43.37	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	8.95 R	6.89	74.00	0.0	0.00	0.00	0.00	
		-60.96 L	-46.89	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.51 R	16.55	78.50	0.0	0.00	0.00	0.00	
		-55.01 L	-42.32	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.61	2.21	8.61	2.21	HS 44.22	79.6
HS20	14.35	3.68	14.35	3.68	HS 73.70	132.7
2F1	23.83	6.39	23.83	6.39	0.00	95.8
3F1	32.16	4.44	32.16	4.44	0.00	102.1
4F1	34.45	4.11	34.45	4.11	0.00	110.9

5C1	14.34	4.55	14.34	4.55	0.00	182.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.200

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.200

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.0 -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	186.1	-155.5	166.9	-174.7
OPER	300.6C	-268.7	268.7	-300.6C	310.2	-259.1	278.2	-291.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00			
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50		
OPER	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00			
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50		
OPER	2F1	37.81 R	29.08	40.00	0.0	0.00	0.00	0.00			
		-33.51 L	-25.78	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	45.95 R	35.35	44.00	0.0	0.00	0.00	0.00			
		-48.20 L	-37.08	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	42.32 R	32.55	44.00	0.0	0.00	0.00	0.00			
		-52.10 L	-40.08	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	46.42 R	35.71	81.00	0.0	0.00	0.00	0.00			
		-44.83 L	-34.49	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.18	2.79	2.85	3.14	HS 55.86	100.6
HS20	5.30	4.66	4.76	5.23	HS 93.10	167.6
2F1	8.20	7.73	7.36	8.69	0.00	110.4
3F1	6.75	5.38	6.05	6.04	0.00	123.7
4F1	7.33	4.97	6.57	5.59	0.00	134.3
5C1	6.68	5.78	5.99	6.49	0.00	231.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

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

0.5	0.0	6.3
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.52	-2.30	19.63	-4.19	21.08	-3.22	16.22
OPER	HS20	-2.99	25.52	-2.30	19.63	-4.19	21.08	-3.22	16.22
OPER	2F1	-2.04	15.29	-1.57	11.76	0.00	0.00	0.00	0.00
OPER	3F1	-2.93	20.82	-2.25	16.02	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	21.40	-2.43	16.46	0.00	0.00	0.00	0.00
OPER	5C1	-4.74	20.12	-3.65	15.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.63	2.58	HS 51.52	92.7
HS20	29.38	4.29	HS 85.87	154.6
2F1	60.46	7.17	0.00	107.5
3F1	42.02	5.26	0.00	121.0
4F1	38.94	5.12	0.00	138.3
5C1	25.99	5.45	0.00	217.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.0 -8.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 161.9	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
OPER 269.9	279.4	-279.4	279.4	-279.4	288.9	-269.9	288.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00	
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50
OPER	HS20	58.49 R	45.00	58.00	0.0	40.87	31.44	30.00	
		-55.67 L	-42.82	-8.00	0.0	-37.45	-28.81	15.00	47.50
OPER	2F1	37.81 R	29.08	40.00	0.0	0.00	0.00	0.00	
		-33.51 L	-25.78	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.95 R	35.35	44.00	0.0	0.00	0.00	0.00	
		-48.20 L	-37.08	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.32 R	32.55	44.00	0.0	0.00	0.00	0.00	
		-52.10 L	-40.08	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.42 R	35.71	81.00	0.0	0.00	0.00	0.00	
		-44.83 L	-34.49	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.96	2.91	2.96	2.91	HS 58.18	104.7
HS20	4.94	4.85	4.94	4.85	HS 96.96	174.5
2F1	7.64	8.05	7.64	8.05	0.00	114.6
3F1	6.29	5.60	6.29	5.60	0.00	128.8
4F1	6.83	5.18	6.83	5.18	0.00	139.8

5C1	6.22	6.02	6.22	6.02	0.00	240.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.300

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.300

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 4.8

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	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50			
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00		
OPER	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50			
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00		
OPER	2F1	55.98 R	43.07	42.50	0.0	0.00	0.00	0.00			
		-27.82 L	-21.40	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.07 R	54.67	46.50	0.0	0.00	0.00	0.00			
		-40.01 L	-30.78	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	72.96 R	56.13	46.50	0.0	0.00	0.00	0.00			
		-43.25 L	-33.27	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	66.81 R	51.39	48.50	0.0	0.00	0.00	0.00			
		-39.84 L	-30.64	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.07	3.55	1.85	3.97	HS 36.92	66.5
HS20	3.45	5.92	3.08	6.61	HS 61.54	110.8
2F1	5.28	9.83	4.71	10.98	0.00	70.7
3F1	4.16	6.84	3.71	7.64	0.00	85.4
4F1	4.05	6.32	3.62	7.06	0.00	97.6
5C1	4.43	6.87	3.95	7.67	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.7	67.0
OPER	151.3	-121.1	111.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.35	20.66	-3.35	15.90	-6.46	18.14	-4.97	13.95
OPER	HS20	-4.35	20.66	-3.35	15.90	-6.46	18.14	-4.97	13.95
OPER	2F1	-3.57	12.90	-2.75	9.92	0.00	0.00	0.00	0.00
OPER	3F1	-3.84	17.18	-2.95	13.21	0.00	0.00	0.00	0.00
OPER	4F1	-3.16	17.57	-2.43	13.51	0.00	0.00	0.00	0.00
OPER	5C1	-6.58	16.82	-5.06	12.94	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.25	3.24	HS 64.84	116.7
HS20	18.75	5.40	HS 108.06	194.5
2F1	33.88	8.65	0.00	129.8
3F1	31.57	6.50	0.00	149.5
4F1	38.29	6.36	0.00	171.6
5C1	18.41	6.64	0.00	265.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 4.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.6	169.6	-165.7	169.6	-165.7	164.7	-170.6	164.7	-
OPER 284.3	279.4	-279.4	279.4	-279.4	274.5	-284.3	274.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50	
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00
OPER	HS20	85.73 R	65.95	60.50	0.0	61.84	47.57	32.50	
		-46.21 L	-35.55	-8.00	0.0	-32.60	-25.07	15.00	0.00
OPER	2F1	55.98 R	43.07	42.50	0.0	0.00	0.00	0.00	
		-27.82 L	-21.40	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.07 R	54.67	46.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.78	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.96 R	56.13	46.50	0.0	0.00	0.00	0.00	
		-43.25 L	-33.27	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.81 R	51.39	48.50	0.0	0.00	0.00	0.00	
		-39.84 L	-30.64	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	3.69	1.92	3.69	HS 38.43	69.2
HS20	3.20	6.15	3.20	6.15	HS 64.04	115.3
2F1	4.90	10.22	4.90	10.22	0.00	73.6
3F1	3.86	7.11	3.86	7.11	0.00	88.8
4F1	3.76	6.57	3.76	6.57	0.00	101.6

5C1	4.11	7.14	4.11	7.14	0.00	164.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.400

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.400

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 13.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.9	-169.6	152.7	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.5	-282.7	254.6	-314.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00			
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00		
OPER	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00			
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00		
OPER	2F1	65.95 R	50.73	45.00	0.0	0.00	0.00	0.00			
		-22.12 L	-17.02	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.33 R	64.87	45.00	0.0	0.00	0.00	0.00			
		-31.82 L	-24.48	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.47 R	69.60	49.00	0.0	0.00	0.00	0.00			
		-34.40 L	-26.46	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.03 R	62.33	47.00	0.0	0.00	0.00	0.00			
		-36.33 L	-27.95	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.78	4.62	1.58	5.14	HS 31.66	57.0
HS20	2.97	7.69	2.64	8.56	HS 52.76	95.0
2F1	4.34	12.78	3.86	14.23	0.00	57.9
3F1	3.40	8.89	3.02	9.89	0.00	69.4
4F1	3.17	8.22	2.81	9.15	0.00	76.0
5C1	3.54	7.78	3.14	8.66	0.00	125.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.4	68.2
OPER	151.3	-119.0	113.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.94	11.65
OPER	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.94	11.65
OPER	2F1	-5.65	10.44	-4.35	8.03	0.00	0.00	0.00	0.00
OPER	3F1	-6.72	13.54	-5.17	10.42	0.00	0.00	0.00	0.00
OPER	4F1	-5.68	13.53	-4.37	10.41	0.00	0.00	0.00	0.00
OPER	5C1	-8.66	14.27	-6.66	10.98	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.91	4.02	HS 80.32	144.6
HS20	13.19	6.69	HS 133.87	241.0
2F1	21.07	10.89	0.00	163.4
3F1	17.71	8.40	0.00	193.2
4F1	20.94	8.40	0.00	226.9
5C1	13.74	7.97	0.00	318.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 13.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.1	173.3	-162.0	173.3	-162.0	159.2	-176.1	159.2	-
OPER 293.5	279.4	-279.4	279.4	-279.4	265.3	-293.5	265.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	HS20	96.49 R	74.22	63.00	0.0	74.80	57.54	35.00	
		-36.75 L	-28.27	-8.00	0.0	-28.46	-21.89	15.00	0.00
OPER	2F1	65.95 R	50.73	45.00	0.0	0.00	0.00	0.00	
		-22.12 L	-17.02	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.33 R	64.87	45.00	0.0	0.00	0.00	0.00	
		-31.82 L	-24.48	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.47 R	69.60	49.00	0.0	0.00	0.00	0.00	
		-34.40 L	-26.46	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.03 R	62.33	47.00	0.0	0.00	0.00	0.00	
		-36.33 L	-27.95	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.65	4.79	1.65	4.79	HS 32.99	59.4
HS20	2.75	7.99	2.75	7.99	HS 54.99	99.0
2F1	4.02	13.27	4.02	13.27	0.00	60.3
3F1	3.15	9.22	3.15	9.22	0.00	72.4
4F1	2.93	8.53	2.93	8.53	0.00	79.2

5C1	3.27	8.08	3.27	8.08	0.00	131.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.500

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.500

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 2.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.2 17.0

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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50			
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00		0.00	
OPER	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50			
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00		0.00	
OPER	2F1	67.18 R	51.67	47.50	0.0	0.00	0.00	0.00		0.00	
		-16.43 L	-12.64	7.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	89.77 L	69.05	27.50	0.0	0.00	0.00	0.00		0.00	
		-23.64 L	-18.18	5.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	93.76 R	72.12	51.50	0.0	0.00	0.00	0.00		0.00	
		-25.55 L	-19.65	2.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	85.67 R	65.90	88.50	0.0	0.00	0.00	0.00		0.00	
		-34.40 L	-26.46	6.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.80	6.30	1.59	7.01	HS	31.86
HS20	2.99	10.51	2.65	11.68	HS	53.10
2F1	4.20	17.45	3.73	19.40		0.00
3F1	3.15	12.13	2.79	13.49		0.00
4F1	3.01	11.22	2.67	12.48		0.00
5C1	3.30	8.34	2.92	9.27		0.00

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.	2.500		2F1
			3F1
			4F1
			5C1

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

0.1	0.0	0.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.3	-117.0	115.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.08	13.29	-10.06	10.22	-11.82	12.21	-9.09	9.39
OPER	HS20	-13.08	13.29	-10.06	10.22	-11.82	12.21	-9.09	9.39
OPER	2F1	-7.94	8.01	-6.11	6.16	0.00	0.00	0.00	0.00
OPER	3F1	-9.95	10.05	-7.65	7.73	0.00	0.00	0.00	0.00
OPER	4F1	-9.28	9.40	-7.14	7.23	0.00	0.00	0.00	0.00
OPER	5C1	-10.93	11.66	-8.41	8.97	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.36	5.23	HS 104.54	188.2
HS20	8.94	8.71	HS 174.24	313.6
2F1	14.73	14.45	0.00	216.8
3F1	11.75	11.52	0.00	265.0
4F1	12.61	12.32	0.00	332.7
5C1	10.70	9.93	0.00	397.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.2 17.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50	
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00
OPER	HS20	94.36 L	72.58	23.50	0.0	80.36	61.82	37.50	
		-27.30 L	-21.00	-8.00	0.0	-24.32	-18.71	15.00	0.00
OPER	2F1	67.18 R	51.67	47.50	0.0	0.00	0.00	0.00	
		-16.43 L	-12.64	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.77 L	69.05	27.50	0.0	0.00	0.00	0.00	
		-23.64 L	-18.18	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.76 R	72.12	51.50	0.0	0.00	0.00	0.00	
		-25.55 L	-19.65	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.67 R	65.90	88.50	0.0	0.00	0.00	0.00	
		-34.40 L	-26.46	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.66	6.54	1.66	6.54	HS 33.23	59.8
HS20	2.77	10.90	2.77	10.90	HS 55.38	99.7
2F1	3.89	18.11	3.89	18.11	0.00	58.3
3F1	2.91	12.59	2.91	12.59	0.00	66.9
4F1	2.79	11.65	2.79	11.65	0.00	75.2

5C1	3.05	8.65	3.05	8.65	0.00	122.0
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.600

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.3	-171.3	151.1	-190.5
OPER	300.6C	-268.7	268.7	-300.6C	283.8	-285.5	251.8	-317.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00			
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00		
OPER	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00			
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00		
OPER	2F1	66.15 L	50.88	30.00	0.0	0.00	0.00	0.00			
		-19.63 R	-15.10	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.67 L	65.13	30.00	0.0	0.00	0.00	0.00			
		-28.25 R	-21.73	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.83 L	69.87	26.00	0.0	0.00	0.00	0.00			
		-30.59 R	-23.53	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.76 L	64.43	28.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.77	5.69	1.57	6.32	HS 31.38	56.5
HS20	2.95	9.48	2.62	10.54	HS 52.29	94.1
2F1	4.29	14.54	3.81	16.17	0.00	57.1
3F1	3.35	10.11	2.97	11.24	0.00	68.4
4F1	3.12	9.33	2.77	10.38	0.00	74.8
5C1	3.39	8.37	3.01	9.31	0.00	120.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available 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	-16.75	9.12	-12.88	7.02	-14.76	9.40	-11.35	7.23
OPER	HS20	-16.75	9.12	-12.88	7.02	-14.76	9.40	-11.35	7.23
OPER	2F1	-10.36	5.71	-7.97	4.39	0.00	0.00	0.00	0.00
OPER	3F1	-13.43	6.82	-10.33	5.25	0.00	0.00	0.00	0.00
OPER	4F1	-13.41	5.83	-10.32	4.49	0.00	0.00	0.00	0.00
OPER	5C1	-13.40	9.45	-10.31	7.27	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.11	7.52	HS 82.27	148.1
HS20	6.86	12.54	HS 137.11	246.8
2F1	11.08	20.66	0.00	166.2
3F1	8.55	17.29	0.00	196.6
4F1	8.56	20.21	0.00	231.2
5C1	8.57	12.48	0.00	342.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00	
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00
OPER	HS20	96.30 L	74.08	12.00	0.0	76.22	58.63	40.00	
		-30.13 R	-23.17	83.00	0.0	-26.61	-20.47	60.00	0.00
OPER	2F1	66.15 L	50.88	30.00	0.0	0.00	0.00	0.00	
		-19.63 R	-15.10	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.67 L	65.13	30.00	0.0	0.00	0.00	0.00	
		-28.25 R	-21.73	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.83 L	69.87	26.00	0.0	0.00	0.00	0.00	
		-30.59 R	-23.53	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.76 L	64.43	28.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.64	5.90	1.64	5.90	HS 32.72	58.9
HS20	2.73	9.83	2.73	9.83	HS 54.53	98.1
2F1	3.97	15.09	3.97	15.09	0.00	59.5
3F1	3.10	10.49	3.10	10.49	0.00	71.3
4F1	2.89	9.68	2.89	9.68	0.00	78.0

5C1	3.13	8.68	3.13	8.68	0.00	125.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.700

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.7 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.4	154.9	-186.6
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50			
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00		
OPER	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50			
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00		
OPER	2F1	56.41 L	43.39	32.50	0.0	0.00	0.00	0.00	0.00		
		-24.73 R	-19.02	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.67 L	55.13	28.50	0.0	0.00	0.00	0.00	0.00		
		-35.57 R	-27.36	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.62 L	56.63	28.50	0.0	0.00	0.00	0.00	0.00		
		-38.53 R	-29.64	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.30 R	55.62	89.50	0.0	0.00	0.00	0.00	0.00		
		-36.39 R	-28.00	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.02	4.41	1.80	4.92	HS 35.96	64.7
HS20	3.37	7.36	3.00	8.20	HS 59.94	107.9
2F1	5.14	11.29	4.58	12.58	0.00	68.7
3F1	4.05	7.84	3.60	8.74	0.00	82.9
4F1	3.94	7.24	3.51	8.07	0.00	94.7
5C1	4.01	7.67	3.57	8.55	0.00	142.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	120.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.51	4.55	-15.77	3.50	-17.75	6.82	-13.66	5.25
OPER	HS20	-20.51	4.55	-15.77	3.50	-17.75	6.82	-13.66	5.25
OPER	2F1	-12.82	3.63	-9.86	2.79	0.00	0.00	0.00	0.00
OPER	3F1	-17.07	3.95	-13.13	3.04	0.00	0.00	0.00	0.00
OPER	4F1	-17.45	3.53	-13.42	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-16.45	7.30	-12.66	5.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.30	10.55	HS 65.98	118.8
HS20	5.50	17.59	HS 109.97	197.9
2F1	8.79	33.09	0.00	131.9
3F1	6.61	30.40	0.00	152.0
4F1	6.46	34.01	0.00	174.5
5C1	6.85	16.45	0.00	274.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.7 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.8	279.4	-279.4	279.4	-279.4	269.0	-289.8	269.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	HS20	86.17 L	66.29	14.50	0.0	64.63	49.71	42.50	
		-37.94 R	-29.19	83.00	0.0	-30.08	-23.14	60.00	0.00
OPER	2F1	56.41 L	43.39	32.50	0.0	0.00	0.00	0.00	
		-24.73 R	-19.02	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.67 L	55.13	28.50	0.0	0.00	0.00	0.00	
		-35.57 R	-27.36	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.62 L	56.63	28.50	0.0	0.00	0.00	0.00	
		-38.53 R	-29.64	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.30 R	55.62	89.50	0.0	0.00	0.00	0.00	
		-36.39 R	-28.00	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.87	4.58	1.87	4.58	HS 37.46	67.4
HS20	3.12	7.64	3.12	7.64	HS 62.43	112.4
2F1	4.77	11.72	4.77	11.72	0.00	71.5
3F1	3.75	8.15	3.75	8.15	0.00	86.3
4F1	3.65	7.52	3.65	7.52	0.00	98.6

5C1	3.72	7.96	3.72	7.96	0.00	148.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.800

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.800

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	110.00		
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00			
OPER	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	110.00		
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00			
OPER	2F1	38.40 L	29.53	35.00	0.0	0.00	0.00	0.00	0.00		
		-29.82 R	-22.94	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.84 L	36.03	31.00	0.0	0.00	0.00	0.00	0.00		
		-42.90 R	-33.00	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.14 L	33.19	31.00	0.0	0.00	0.00	0.00	0.00		
		-46.46 R	-35.74	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.41 R	41.85	92.00	0.0	0.00	0.00	0.00	0.00		
		-40.26 R	-30.97	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.05	3.51	2.72	3.93	HS 54.46	98.0
HS20	5.08	5.84	4.54	6.54	HS 90.77	163.4
2F1	7.86	8.97	7.03	10.04	0.00	105.4
3F1	6.45	6.23	5.76	6.98	0.00	132.5
4F1	7.00	5.76	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.800		2F1
			3F1
			4F1
			5C1

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

-0.4	-5.3	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.34	3.64	-19.49	2.80	-20.71	4.54	-15.93	3.49
OPER	HS20	-25.34	3.64	-19.49	2.80	-20.71	4.54	-15.93	3.49
OPER	2F1	-15.22	2.28	-11.71	1.75	0.00	0.00	0.00	0.00
OPER	3F1	-20.71	3.28	-15.93	2.52	0.00	0.00	0.00	0.00
OPER	4F1	-21.27	3.53	-16.36	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-19.65	5.28	-15.12	4.06	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.62	16.14	HS 52.43	94.4
HS20	4.37	26.90	HS 87.38	157.3
2F1	7.27	53.61	0.00	109.1
3F1	5.34	37.27	0.00	122.9
4F1	5.20	34.60	0.00	140.5
5C1	5.63	23.13	0.00	225.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00
OPER	HS20	59.46 L	45.74	17.00	0.0	45.30	34.84	45.00	
		-45.76 R	-35.20	83.00	0.0	-35.35	-27.19	60.00	110.00
OPER	2F1	38.40 L	29.53	35.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.84 L	36.03	31.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.14 L	33.19	31.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.41 R	41.85	92.00	0.0	0.00	0.00	0.00	
		-40.26 R	-30.97	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.63	101.9
HS20	4.72	6.08	4.72	6.08	HS 94.38	169.9
2F1	7.31	9.33	7.31	9.33	0.00	109.6
3F1	5.99	6.48	5.99	6.48	0.00	137.8
4F1	6.50	5.99	6.50	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.900

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 2.900

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50			
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50		
OPER	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50			
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50		
OPER	2F1	13.55 L	10.42	37.50	0.0	0.00	0.00	0.00			
		-34.91 R	-26.86	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.46 R	10.35	95.00	0.0	0.00	0.00	0.00			
		-50.23 R	-38.64	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.37 R	11.05	99.00	0.0	0.00	0.00	0.00			
		-54.40 R	-41.84	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.23 R	21.71	94.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.97	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.51	2.55	6.76	2.87	HS 50.98	91.8
HS20	12.52	4.25	11.26	4.79	HS 84.96	152.9
2F1	23.52	7.18	21.16	8.10	0.00	107.7
3F1	23.68	4.99	21.30	5.63	0.00	114.8
4F1	22.18	4.61	19.95	5.20	0.00	124.4
5C1	11.29	5.36	10.16	6.04	0.00	214.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	2.900		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	-65.2	74.5
OPER	151.3	-108.6	124.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	3.78	-23.12	2.91	-23.53	3.50	-18.10	2.69
OPER	HS20	-30.06	3.78	-23.12	2.91	-23.53	3.50	-18.10	2.69
OPER	2F1	-17.46	2.28	-13.43	1.75	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	3.28	-18.63	2.52	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	3.54	-19.31	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	3.50	-17.59	2.69	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.17	19.69	HS 43.36	78.1
HS20	3.61	32.82	HS 72.27	130.1
2F1	6.22	54.52	0.00	93.3
3F1	4.48	37.90	0.00	103.1
4F1	4.33	35.06	0.00	116.8
5C1	4.75	35.46	0.00	190.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 2.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.3 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.8	160.4	-174.8	160.4	-174.8	178.4	-156.8	178.4	-
OPER 261.4	279.4	-279.4	279.4	-279.4	297.4	-261.4	297.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50	
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50
OPER	HS20	16.43 L	12.64	19.50	0.0	25.46	19.58	47.50	
		-59.00 L	-45.39	41.00	0.0	-53.33	-41.03	60.00	37.50
OPER	2F1	13.55 L	10.42	37.50	0.0	0.00	0.00	0.00	
		-34.91 R	-26.86	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.46 R	10.35	95.00	0.0	0.00	0.00	0.00	
		-50.23 R	-38.64	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.37 R	11.05	99.00	0.0	0.00	0.00	0.00	
		-54.40 R	-41.84	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.23 R	21.71	94.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.97	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.01	2.66	7.01	2.66	HS 53.16	95.7
HS20	11.68	4.43	11.68	4.43	HS 88.61	159.5
2F1	21.96	7.49	21.96	7.49	0.00	112.3
3F1	22.10	5.20	22.10	5.20	0.00	119.7
4F1	20.70	4.80	20.70	4.80	0.00	129.7

5C1	10.54	5.59	10.54	5.59	0.00	223.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00			
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00			
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00			
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00			
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-7.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.9	63.7
OPER	151.3	-106.6	106.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.28	-18.10	20.22
OPER	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.28	-18.10	20.22
OPER	2F1	-17.46	19.45	-13.43	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.22	27.47	-18.63	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.11	29.05	-19.31	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-22.87	25.91	-17.59	19.93	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.09	3.07	HS 61.49	110.7
2F1	5.48	5.46	0.00	81.9
3F1	3.88	3.86	0.00	88.9
4F1	3.67	3.65	0.00	98.7
5C1	4.11	4.10	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -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. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00	
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00	
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00	
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00			
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00		
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00			
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00			
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00			
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00			
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-9.1	9.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.9	63.7
OPER	151.3	-106.6	106.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.48	34.53	-26.52	26.56	-26.11	26.28	-20.08	20.22
OPER	HS20	-34.48	34.53	-26.52	26.56	-26.11	26.28	-20.08	20.22
OPER	2F1	-19.43	19.45	-14.95	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.44	27.47	-21.11	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.01	29.05	-22.31	22.35	0.00	0.00	0.00	0.00
OPER	5C1	-25.93	25.91	-19.95	19.93	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.09	3.07	HS 61.49	110.7
2F1	5.48	5.46	0.00	81.9
3F1	3.88	3.86	0.00	88.9
4F1	3.67	3.65	0.00	98.7
5C1	4.11	4.10	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

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

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -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. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	HS20	19.98 L	15.37	-8.00	0.0	17.84	13.72	15.00	
		-98.43 L	-75.72	29.50	0.0	-89.21	-68.63	60.00	40.00
OPER	2F1	12.03 L	9.25	7.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.77	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 L	13.31	5.00	0.0	0.00	0.00	0.00	
		-63.24 L	-48.64	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 L	14.39	2.00	0.0	0.00	0.00	0.00	
		-74.77 L	-57.52	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 L	11.84	-34.50	0.0	0.00	0.00	0.00	
		-59.44 L	-45.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.100

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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 Top	Bending Bott.	Negative Top	Bending Bott.	
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.100

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50			
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00		62.50	
OPER	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50			
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00		62.50	
OPER	2F1	13.45 R	10.34	62.50	0.0	0.00	0.00	0.00		0.00	
		-34.72 L	-26.71	32.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	15.11 L	11.62	5.00	0.0	0.00	0.00	0.00		0.00	
		-49.95 L	-38.42	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	16.17 L	12.44	1.00	0.0	0.00	0.00	0.00		0.00	
		-54.10 L	-41.61	27.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	29.33 L	22.57	5.50	0.0	0.00	0.00	0.00		0.00	
		-46.56 L	-35.81	25.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.34	2.57	6.60	2.90	HS 51.46	92.6
HS20	12.23	4.29	11.00	4.83	HS 85.76	154.4
2F1	23.62	7.25	21.24	8.17	0.00	108.7
3F1	21.02	5.04	18.91	5.68	0.00	115.9
4F1	19.65	4.65	17.67	5.24	0.00	125.6
5C1	10.83	5.41	9.74	6.09	0.00	216.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.100	2F1	
		3F1	
		4F1	
		5C1	

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

0.6	0.0	7.6
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.7	64.9
OPER	151.3	-124.5	108.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.23	23.71	-2.48	18.24
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.23	23.71	-2.48	18.24
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	24.26	-2.24	18.67	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.17	22.88	-2.43	17.60	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.15	2.16	HS 43.12	77.6
HS20	38.58	3.59	HS 71.86	129.4
2F1	61.44	6.19	0.00	92.9
3F1	42.71	4.46	0.00	102.6
4F1	39.58	4.30	0.00	116.1
5C1	39.35	4.73	0.00	189.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.2 -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50	
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00	62.50
OPER	HS20	16.13 R	12.41	80.50	0.0	25.97	19.97	52.50	
		-58.69 R	-45.15	59.00	0.0	-52.89	-40.68	40.00	62.50
OPER	2F1	13.45 R	10.34	62.50	0.0	0.00	0.00	0.00	
		-34.72 L	-26.71	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.11 L	11.62	5.00	0.0	0.00	0.00	0.00	
		-49.95 L	-38.42	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.17 L	12.44	1.00	0.0	0.00	0.00	0.00	
		-54.10 L	-41.61	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.33 L	22.57	5.50	0.0	0.00	0.00	0.00	
		-46.56 L	-35.81	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.85	2.68	6.85	2.68	HS 53.65	96.6
HS20	11.41	4.47	11.41	4.47	HS 89.42	161.0
2F1	22.04	7.56	22.04	7.56	0.00	113.4
3F1	19.62	5.25	19.62	5.25	0.00	120.8
4F1	18.33	4.85	18.33	4.85	0.00	131.0

5C1	10.10	5.64	10.10	5.64	0.00	225.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.200

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.7

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	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00			
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00		72.50	
OPER	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00			
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00		72.50	
OPER	2F1	38.35 R	29.50	65.00	0.0	0.00	0.00	0.00			
		-29.68 L	-22.83	32.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	46.76 R	35.97	69.00	0.0	0.00	0.00	0.00			
		-42.69 L	-32.84	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	43.07 R	33.13	69.00	0.0	0.00	0.00	0.00			
		-46.24 L	-35.57	27.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	55.19 L	42.45	8.00	0.0	0.00	0.00	0.00			
		-40.08 L	-30.83	28.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.03	3.57	2.71	3.99	HS	54.14	97.5
HS20	5.05	5.95	4.51	6.65	HS	90.23	162.4
2F1	7.82	9.08	6.99	10.16		0.00	104.8
3F1	6.41	6.31	5.73	7.06		0.00	131.7
4F1	6.96	5.83	6.22	6.52		0.00	157.3
5C1	5.43	6.72	4.85	7.52		0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

3.200

HS20 HS20

2F1

3F1

4F1

5C1

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

0.5

0.0

5.6

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)

INV. 90.8 -73.5 66.2

OPER 151.3 -122.5 110.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.47	20.91	-3.44	16.08
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.47	20.91	-3.44	16.08
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.92	20.77	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.44	2.61	HS 52.10	93.8
HS20	27.40	4.34	HS 86.84	156.3
2F1	60.42	7.23	0.00	108.5
3F1	42.00	5.31	0.00	122.1
4F1	38.92	5.18	0.00	139.7
5C1	25.77	5.60	0.00	224.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.2	-168.1	167.2	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00	
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50
OPER	HS20	59.37 R	45.67	83.00	0.0	44.98	34.60	55.00	
		-45.31 L	-34.85	17.00	0.0	-33.04	-25.42	40.00	72.50
OPER	2F1	38.35 R	29.50	65.00	0.0	0.00	0.00	0.00	
		-29.68 L	-22.83	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.76 R	35.97	69.00	0.0	0.00	0.00	0.00	
		-42.69 L	-32.84	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.07 R	33.13	69.00	0.0	0.00	0.00	0.00	
		-46.24 L	-35.57	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.19 L	42.45	8.00	0.0	0.00	0.00	0.00	
		-40.08 L	-30.83	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.82	3.71	2.82	3.71	HS 56.31	101.4
HS20	4.69	6.18	4.69	6.18	HS 93.86	168.9
2F1	7.26	9.44	7.26	9.44	0.00	109.0
3F1	5.96	6.56	5.96	6.56	0.00	137.0
4F1	6.47	6.06	6.47	6.06	0.00	163.6

5C1	5.05	6.99	5.05	6.99	0.00	201.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.300

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.0 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50			
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00		
OPER	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50			
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00		
OPER	2F1	56.46 R	43.43	67.50	0.0	0.00	0.00	0.00			
		-24.64 L	-18.95	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.74 R	55.18	71.50	0.0	0.00	0.00	0.00			
		-35.44 L	-27.26	30.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	73.68 R	56.68	71.50	0.0	0.00	0.00	0.00			
		-38.39 L	-29.53	27.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	72.92 L	56.09	10.50	0.0	0.00	0.00	0.00			
		-36.19 L	-27.84	29.00	0.0	0.00	0.00	0.00	0.00	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	1.99	4.50	1.77	5.01	HS 35.43	63.8
HS20	3.32	7.50	2.95	8.35	HS 59.06	106.3
2F1	5.09	11.45	4.52	12.75	0.00	67.8
3F1	4.00	7.96	3.56	8.86	0.00	81.8
4F1	3.90	7.35	3.46	8.18	0.00	93.5
5C1	3.94	7.79	3.50	8.68	0.00	140.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.4
OPER	151.3	-120.4	112.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.74	17.96	-5.19	13.81
OPER	HS20	-4.41	20.57	-3.39	15.82	-6.74	17.96	-5.19	13.81
OPER	2F1	-3.61	12.86	-2.77	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.51	-2.42	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.71	3.28	HS 65.54	118.0
HS20	17.85	5.46	HS 109.23	196.6
2F1	33.38	8.73	0.00	131.0
3F1	30.66	6.56	0.00	150.9
4F1	38.26	6.42	0.00	173.3
5C1	18.21	6.81	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.0 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	HS20	86.43 R	66.48	85.50	0.0	65.39	50.30	57.50	
		-37.61 L	-28.93	17.00	0.0	-29.08	-22.37	40.00	0.00
OPER	2F1	56.46 R	43.43	67.50	0.0	0.00	0.00	0.00	
		-24.64 L	-18.95	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.74 R	55.18	71.50	0.0	0.00	0.00	0.00	
		-35.44 L	-27.26	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.68 R	56.68	71.50	0.0	0.00	0.00	0.00	
		-38.39 L	-29.53	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.92 L	56.09	10.50	0.0	0.00	0.00	0.00	
		-36.19 L	-27.84	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.85	4.67	1.85	4.67	HS 36.93	66.5
HS20	3.08	7.79	3.08	7.79	HS 61.54	110.8
2F1	4.71	11.89	4.71	11.89	0.00	70.7
3F1	3.71	8.26	3.71	8.26	0.00	85.3
4F1	3.61	7.63	3.61	7.63	0.00	97.5

5C1	3.65	8.09	3.65	8.09	0.00	145.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.400

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 19.3

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	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00			
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00		
OPER	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00			
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00		
OPER	2F1	66.30 R	51.00	70.00	0.0	0.00	0.00	0.00			
		-19.59 L	-15.07	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.87 R	65.29	70.00	0.0	0.00	0.00	0.00			
		-28.19 L	-21.68	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.05 R	70.04	74.00	0.0	0.00	0.00	0.00			
		-30.53 L	-23.49	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.00 R	64.62	72.00	0.0	0.00	0.00	0.00			
		-33.75 L	-25.96	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.73	5.81	1.53	6.45	HS 30.66	55.2
HS20	2.88	9.68	2.56	10.75	HS 51.10	92.0
2F1	4.22	14.78	3.74	16.41	0.00	56.0
3F1	3.30	10.27	2.92	11.41	0.00	67.1
4F1	3.07	9.48	2.72	10.53	0.00	73.5
5C1	3.33	8.58	2.95	9.53	0.00	118.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

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

0.1	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.90	-9.31	14.97	-7.17	11.51
OPER	HS20	-8.97	16.78	-6.90	12.90	-9.31	14.97	-7.17	11.51
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.38	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.48	-4.47	10.37	0.00	0.00	0.00	0.00
OPER	5C1	-8.70	13.45	-6.69	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.62	4.09	HS 81.85	147.3
HS20	12.70	6.82	HS 136.42	245.5
2F1	20.83	11.00	0.00	165.0
3F1	17.44	8.48	0.00	195.1
4F1	20.38	8.49	0.00	229.2
5C1	13.60	8.51	0.00	340.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.2	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
OPER 300.3	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00	
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00
OPER	HS20	96.97 R	74.59	88.00	0.0	77.63	59.72	60.00	
		-29.91 L	-23.01	17.00	0.0	-25.66	-19.74	40.00	0.00
OPER	2F1	66.30 R	51.00	70.00	0.0	0.00	0.00	0.00	
		-19.59 L	-15.07	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.87 R	65.29	70.00	0.0	0.00	0.00	0.00	
		-28.19 L	-21.68	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.05 R	70.04	74.00	0.0	0.00	0.00	0.00	
		-30.53 L	-23.49	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.00 R	64.62	72.00	0.0	0.00	0.00	0.00	
		-33.75 L	-25.96	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.60	6.02	1.60	6.02	HS 31.99	57.6
HS20	2.67	10.04	2.67	10.04	HS 53.31	96.0
2F1	3.90	15.33	3.90	15.33	0.00	58.5
3F1	3.05	10.65	3.05	10.65	0.00	70.0
4F1	2.84	9.84	2.84	9.84	0.00	76.7

5C1	3.08	8.90	3.08	8.90	0.00	123.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.500

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.67	R	72.82	76.50	0.0	82.45	63.42	62.50		
		-22.43	R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00	
OPER	HS20	94.67	R	72.82	76.50	0.0	82.45	63.42	62.50		
		-22.43	R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00	
OPER	2F1	67.40	R	51.85	72.50	0.0	0.00	0.00	0.00		
		-14.62	R	-11.24	92.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	90.13	L	69.33	52.50	0.0	0.00	0.00	0.00		
		-21.03	R	-16.17	95.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.15	L	72.42	48.50	0.0	0.00	0.00	0.00		
		-22.77	R	-17.52	98.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	86.30	L	66.39	11.50	0.0	0.00	0.00	0.00		
		-32.71	R	-25.16	93.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.81	1.56	8.66	HS 31.11	56.0
HS20	2.93	13.01	2.59	14.44	HS 51.85	93.3
2F1	4.12	19.97	3.64	22.16	0.00	54.6
3F1	3.08	13.88	2.72	15.40	0.00	62.6
4F1	2.95	12.82	2.61	14.22	0.00	70.4
5C1	3.21	8.92	2.84	9.90	0.00	113.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) 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	-13.12	13.12	-10.09	10.09	-12.11	12.03	-9.32	9.26
OPER	HS20	-13.12	13.12	-10.09	10.09	-12.11	12.03	-9.32	9.26
OPER	2F1	-7.97	7.98	-6.13	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.01	-7.69	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.95	-8.45	8.42	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.33	HS 106.32	191.4
HS20	8.86	8.88	HS 177.20	319.0
2F1	14.58	14.60	0.00	218.7
3F1	11.62	11.64	0.00	267.3
4F1	12.45	12.47	0.00	336.2
5C1	10.59	10.64	0.00	423.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50	
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00
OPER	HS20	94.67 R	72.82	76.50	0.0	82.45	63.42	62.50	
		-22.43 R	-17.25	108.00	0.0	-22.28	-17.14	85.00	0.00
OPER	2F1	67.40 R	51.85	72.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.24	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.13 L	69.33	52.50	0.0	0.00	0.00	0.00	
		-21.03 R	-16.17	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.15 L	72.42	48.50	0.0	0.00	0.00	0.00	
		-22.77 R	-17.52	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.30 L	66.39	11.50	0.0	0.00	0.00	0.00	
		-32.71 R	-25.16	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	8.10	1.62	8.10	HS 32.47	58.5
HS20	2.71	13.49	2.71	13.49	HS 54.12	97.4
2F1	3.80	20.70	3.80	20.70	0.00	57.0
3F1	2.84	14.39	2.84	14.39	0.00	65.4
4F1	2.72	13.29	2.72	13.29	0.00	73.5

5C1	2.97	9.25	2.97	9.25	0.00	118.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.600

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.600

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.5 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00			
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00		
OPER	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00			
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00		
OPER	2F1	66.32 L	51.01	55.00	0.0	0.00	0.00	0.00			
		-19.68 R	-15.14	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.90 L	65.30	55.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.78	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.07 L	70.06	51.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.59	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.97 L	64.59	53.00	0.0	0.00	0.00	0.00			
		-33.83 R	-26.02	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.74	5.74	1.54	6.37	HS 30.74	55.3
HS20	2.89	9.56	2.56	10.62	HS 51.23	92.2
2F1	4.23	14.67	3.75	16.30	0.00	56.2
3F1	3.30	10.20	2.93	11.33	0.00	67.3
4F1	3.08	9.42	2.73	10.46	0.00	73.7
5C1	3.34	8.54	2.96	9.48	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.600	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.2
OPER	151.3	-114.1	118.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.05	9.24	-11.57	7.11
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.05	9.24	-11.57	7.11
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.48	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.68	-10.35	6.68	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.08	7.70	HS 81.63	146.9
HS20	6.80	12.84	HS 136.05	244.9
2F1	10.98	20.87	0.00	164.6
3F1	8.46	17.47	0.00	194.7
4F1	8.47	20.42	0.00	228.8
5C1	8.48	13.67	0.00	339.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.5 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.5	-179.7	155.5	-
OPER 299.6	279.4	-279.4	279.4	-279.4	259.2	-299.6	259.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00	
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00
OPER	HS20	97.00 L	74.62	37.00	0.0	77.56	59.66	65.00	
		-30.20 R	-23.23	108.00	0.0	-26.05	-20.04	85.00	0.00
OPER	2F1	66.32 L	51.01	55.00	0.0	0.00	0.00	0.00	
		-19.68 R	-15.14	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.90 L	65.30	55.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.78	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.07 L	70.06	51.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.59	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.97 L	64.59	53.00	0.0	0.00	0.00	0.00	
		-33.83 R	-26.02	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.60	5.95	1.60	5.95	HS 32.07	57.7
HS20	2.67	9.92	2.67	9.92	HS 53.45	96.2
2F1	3.91	15.22	3.91	15.22	0.00	58.6
3F1	3.05	10.58	3.05	10.58	0.00	70.2
4F1	2.85	9.77	2.85	9.77	0.00	76.9

5C1	3.09	8.85	3.09	8.85	0.00	123.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.700

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.9 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50			
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00		
OPER	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50			
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00		
OPER	2F1	56.49 L	43.45	57.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.78 L	55.22	53.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.73 L	56.72	53.50	0.0	0.00	0.00	0.00			
		-38.56 R	-29.66	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.39 R	55.68	114.50	0.0	0.00	0.00	0.00			
		-36.34 R	-27.95	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.00	4.43	1.78	4.94	HS 35.62	64.1
HS20	3.34	7.39	2.97	8.23	HS 59.37	106.9
2F1	5.11	11.34	4.54	12.63	0.00	68.2
3F1	4.02	7.88	3.58	8.78	0.00	82.2
4F1	3.91	7.28	3.48	8.11	0.00	94.0
5C1	3.99	7.72	3.55	8.60	0.00	141.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.1	120.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.56	4.42	-15.82	3.40	-18.03	6.66	-13.87	5.13
OPER	HS20	-20.56	4.42	-15.82	3.40	-18.03	6.66	-13.87	5.13
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.13	-13.46	2.41	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.60	-12.69	5.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.86	HS 65.39	117.7
HS20	5.45	18.11	HS 108.98	196.2
2F1	8.72	33.44	0.00	130.7
3F1	6.55	30.72	0.00	150.6
4F1	6.40	38.55	0.00	172.9
5C1	6.79	18.30	0.00	271.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 3.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

0.9 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50	
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00
OPER	HS20	86.47 L	66.52	39.50	0.0	65.25	50.19	67.50	
		-37.98 R	-29.21	108.00	0.0	-29.81	-22.93	85.00	0.00
OPER	2F1	56.49 L	43.45	57.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.78 L	55.22	53.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.73 L	56.72	53.50	0.0	0.00	0.00	0.00	
		-38.56 R	-29.66	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 R	55.68	114.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.95	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.11	66.8
HS20	3.09	7.67	3.09	7.67	HS 61.85	111.3
2F1	4.74	11.77	4.74	11.77	0.00	71.0
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	97.9

5C1	3.69	8.02	3.69	8.02	0.00	147.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.800

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.800

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00			
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00		
OPER	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00			
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00		
OPER	2F1	38.39 L	29.53	60.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 L	36.02	56.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 L	33.18	56.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.40 R	41.85	117.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.7
OPER	151.3	-110.0	122.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.39	2.94	-19.53	2.26	-20.98	4.39	-16.14	3.38
OPER	HS20	-25.39	2.94	-19.53	2.26	-20.98	4.39	-16.14	3.38
OPER	2F1	-15.25	2.02	-11.73	1.55	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.90	-15.97	2.23	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.13	-16.39	2.41	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.74	-15.15	3.65	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.78	HS 51.98	93.6
HS20	4.33	27.97	HS 86.63	155.9
2F1	7.21	60.88	0.00	108.2
3F1	5.30	42.31	0.00	121.9
4F1	5.16	39.21	0.00	139.4
5C1	5.58	25.90	0.00	223.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00	
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00
OPER	HS20	59.43 L	45.72	42.00	0.0	45.25	34.81	70.00	
		-45.75 R	-35.19	108.00	0.0	-35.42	-27.25	85.00	135.00
OPER	2F1	38.39 L	29.53	60.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	56.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	56.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	117.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1	5.16	6.90	5.16	6.90	0.00	206.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.900

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.900

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50			
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50		
OPER	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50			
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50		
OPER	2F1	13.49 L	10.38	62.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 R	10.34	120.00	0.0	0.00	0.00	0.00			
		-50.19 R	-38.60	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.36 R	11.04	124.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.17 R	21.67	119.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.67	2.53	6.91	2.86	HS 50.60	91.1
HS20	12.79	4.22	11.51	4.76	HS 84.33	151.8
2F1	23.76	7.13	21.39	8.05	0.00	106.9
3F1	23.84	4.95	21.46	5.59	0.00	114.0
4F1	22.33	4.57	20.10	5.16	0.00	123.5
5C1	11.38	5.32	10.25	6.00	0.00	212.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.9
OPER	151.3	-107.9	124.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.08	-23.16	2.37	-23.79	3.13	-18.30	2.41
OPER	HS20	-30.11	3.08	-23.16	2.37	-23.79	3.13	-18.30	2.41
OPER	2F1	-17.48	2.02	-13.44	1.55	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.90	-18.66	2.23	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	3.14	-19.35	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.15	-17.62	2.42	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.89	HS 43.01	77.4
HS20	3.58	39.82	HS 71.68	129.0
2F1	6.18	61.90	0.00	92.6
3F1	4.45	43.03	0.00	102.3
4F1	4.29	39.73	0.00	115.8
5C1	4.71	39.60	0.00	188.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 3.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -18.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50	
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50
OPER	HS20	16.21 L	12.47	44.50	0.0	25.07	19.29	72.50	
		-58.98 L	-45.37	66.00	0.0	-54.10	-41.62	85.00	62.50
OPER	2F1	13.49 L	10.38	62.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	120.00	0.0	0.00	0.00	0.00	
		-50.19 R	-38.60	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 R	11.04	124.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.17 R	21.67	119.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.16	2.64	7.16	2.64	HS 52.78	95.0
HS20	11.94	4.40	11.94	4.40	HS 87.97	158.4
2F1	22.19	7.44	22.19	7.44	0.00	111.6
3F1	22.26	5.17	22.26	5.17	0.00	118.9
4F1	20.85	4.77	20.85	4.77	0.00	128.9

5C1	10.63	5.55	10.63	5.55	0.00	221.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -40.3

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	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00		
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00		
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00			
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.02	2.61	HS 45.66	82.2
2F1	32.17	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.16	26.56	-23.79	26.35	-18.30	20.27
OPER	HS20	-30.11	34.53	-23.16	26.56	-23.79	26.35	-18.30	20.27
OPER	2F1	-17.48	19.45	-13.44	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.15	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.97	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.44	5.45	0.00	81.6
3F1	3.85	3.86	0.00	88.6
4F1	3.64	3.65	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00		
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00			
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00		
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00			
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.02	2.61	HS 45.66	82.2
2F1	32.17	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000HS20 HS20
2F1
3F1
4F1
5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.7	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.52	34.53	-26.56	26.56	-26.36	26.35	-20.28	20.27
OPER	HS20	-34.52	34.53	-26.56	26.56	-26.36	26.35	-20.28	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.04	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.97	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.44	5.45	0.00	81.6
3F1	3.85	3.86	0.00	88.6
4F1	3.64	3.65	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	HS20	16.43 R	12.63	133.00	0.0	16.32	12.55	110.00	
		-98.55 L	-75.80	54.50	0.0	-90.65	-69.73	85.00	65.00
OPER	2F1	10.71 R	8.23	117.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	120.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	123.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	159.50	0.0	0.00	0.00	0.00	
		-59.56 R	-45.82	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.100

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.100

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50			
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50		
OPER	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50			
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50		
OPER	2F1	13.48 R	10.37	87.50	0.0	0.00	0.00	0.00	0.00		
		-34.87 L	-26.82	57.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.38 L	10.29	30.00	0.0	0.00	0.00	0.00	0.00		
		-50.17 L	-38.59	55.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.29 L	10.99	26.00	0.0	0.00	0.00	0.00	0.00		
		-54.33 L	-41.79	52.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.11 L	21.62	30.50	0.0	0.00	0.00	0.00	0.00		
		-46.75 L	-35.96	50.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.59	2.53	6.83	2.85	HS 50.56	91.0
HS20	12.64	4.21	11.38	4.76	HS 84.27	151.7
2F1	23.80	7.12	21.42	8.04	0.00	106.9
3F1	23.98	4.95	21.59	5.59	0.00	113.9
4F1	22.46	4.57	20.22	5.16	0.00	123.5
5C1	11.42	5.31	10.28	6.00	0.00	212.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

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

0.6	0.0	7.7
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.19	23.78	-2.46	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.19	23.78	-2.46	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.44	2.15	HS 43.04	77.5
HS20	39.07	3.59	HS 71.74	129.1
2F1	61.56	6.18	0.00	92.7
3F1	42.79	4.45	0.00	102.4
4F1	39.65	4.29	0.00	115.9
5C1	39.42	4.72	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.6 -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50	
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50
OPER	HS20	16.19 R	12.46	105.50	0.0	25.38	19.52	77.50	
		-58.96 R	-45.35	84.00	0.0	-54.15	-41.66	65.00	87.50
OPER	2F1	13.48 R	10.37	87.50	0.0	0.00	0.00	0.00	
		-34.87 L	-26.82	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.38 L	10.29	30.00	0.0	0.00	0.00	0.00	
		-50.17 L	-38.59	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.29 L	10.99	26.00	0.0	0.00	0.00	0.00	
		-54.33 L	-41.79	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.11 L	21.62	30.50	0.0	0.00	0.00	0.00	
		-46.75 L	-35.96	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.08	2.64	7.08	2.64	HS 52.75	94.9
HS20	11.81	4.40	11.81	4.40	HS 87.92	158.2
2F1	22.22	7.43	22.22	7.43	0.00	111.5
3F1	22.39	5.17	22.39	5.17	0.00	118.8
4F1	20.97	4.77	20.97	4.77	0.00	128.8

5C1	10.66	5.54	10.66	5.54	0.00	221.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.200

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.200

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00			
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00		
OPER	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00			
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00		
OPER	2F1	38.38 R	29.53	90.00	0.0	0.00	0.00	0.00			
		-29.81 L	-22.93	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 R	36.01	94.00	0.0	0.00	0.00	0.00			
		-42.88 L	-32.99	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 R	33.17	94.00	0.0	0.00	0.00	0.00			
		-46.44 L	-35.73	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.36 L	41.82	33.00	0.0	0.00	0.00	0.00			
		-40.25 L	-30.96	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.06	3.50	2.73	3.92	HS 54.64	98.4
HS20	5.09	5.83	4.55	6.53	HS 91.07	163.9
2F1	7.88	8.95	7.05	10.02	0.00	105.7
3F1	6.46	6.22	5.78	6.97	0.00	132.9
4F1	7.02	5.74	6.28	6.43	0.00	155.0
5C1	5.57	6.63	4.98	7.42	0.00	199.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

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

0.5	0.0	5.8
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.44	20.97	-3.41	16.13
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.44	20.97	-3.41	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.59	2.60	HS 52.02	93.6
HS20	27.65	4.34	HS 86.69	156.1
2F1	60.53	7.22	0.00	108.3
3F1	42.08	5.30	0.00	122.0
4F1	38.99	5.17	0.00	139.5
5C1	25.80	5.59	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00	
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00
OPER	HS20	59.43 R	45.71	108.00	0.0	44.49	34.23	80.00	
		-45.74 L	-35.19	42.00	0.0	-35.63	-27.41	65.00	15.00
OPER	2F1	38.38 R	29.53	90.00	0.0	0.00	0.00	0.00	
		-29.81 L	-22.93	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.01	94.00	0.0	0.00	0.00	0.00	
		-42.88 L	-32.99	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.17	94.00	0.0	0.00	0.00	0.00	
		-46.44 L	-35.73	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.36 L	41.82	33.00	0.0	0.00	0.00	0.00	
		-40.25 L	-30.96	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.64	2.84	3.64	HS 56.81	102.3
HS20	4.73	6.07	4.73	6.07	HS 94.69	170.4
2F1	7.33	9.31	7.33	9.31	0.00	109.9
3F1	6.01	6.47	6.01	6.47	0.00	138.2
4F1	6.52	5.97	6.52	5.97	0.00	161.3

5C1	5.18	6.89	5.18	6.89	0.00	207.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.300

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.300

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.4

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	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50			
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00		
OPER	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50			
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00		
OPER	2F1	56.49 R	43.45	92.50	0.0	0.00	0.00	0.00			
		-24.74 L	-19.03	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	96.50	0.0	0.00	0.00	0.00			
		-35.60 L	-27.38	55.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	73.74 R	56.72	96.50	0.0	0.00	0.00	0.00			
		-38.55 L	-29.66	52.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	72.37 L	55.67	35.50	0.0	0.00	0.00	0.00			
		-36.33 L	-27.95	54.00	0.0	0.00	0.00	0.00	0.00	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	2.01	4.42	1.79	4.93	HS 35.73	64.3
HS20	3.35	7.37	2.98	8.21	HS 59.55	107.2
2F1	5.12	11.31	4.56	12.60	0.00	68.4
3F1	4.03	7.86	3.59	8.76	0.00	82.5
4F1	3.93	7.26	3.49	8.09	0.00	94.3
5C1	4.00	7.70	3.56	8.58	0.00	142.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.71	18.02	-5.16	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.71	18.02	-5.16	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.47	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	3.27	HS 65.44	117.8
HS20	17.97	5.45	HS 109.06	196.3
2F1	33.42	8.72	0.00	130.8
3F1	30.70	6.55	0.00	150.7
4F1	38.34	6.41	0.00	173.0
5C1	18.23	6.80	0.00	271.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50	
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00
OPER	HS20	86.47 R	66.52	110.50	0.0	65.00	50.00	82.50	
		-37.97 L	-29.21	42.00	0.0	-30.01	-23.08	65.00	0.00
OPER	2F1	56.49 R	43.45	92.50	0.0	0.00	0.00	0.00	
		-24.74 L	-19.03	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	96.50	0.0	0.00	0.00	0.00	
		-35.60 L	-27.38	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	96.50	0.0	0.00	0.00	0.00	
		-38.55 L	-29.66	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.37 L	55.67	35.50	0.0	0.00	0.00	0.00	
		-36.33 L	-27.95	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.59	1.86	4.59	HS 37.22	67.0
HS20	3.10	7.65	3.10	7.65	HS 62.04	111.7
2F1	4.75	11.74	4.75	11.74	0.00	71.2
3F1	3.74	8.16	3.74	8.16	0.00	85.9
4F1	3.64	7.54	3.64	7.54	0.00	98.2

5C1	3.71	8.00	3.71	8.00	0.00	148.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.400

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.400

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 17.7

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	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00			
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00		
OPER	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00			
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00		
OPER	2F1	66.33 R	51.02	95.00	0.0	0.00	0.00	0.00			
		-19.68 L	-15.14	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	95.00	0.0	0.00	0.00	0.00			
		-28.31 L	-21.78	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	99.00	0.0	0.00	0.00	0.00			
		-30.66 L	-23.59	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	97.00	0.0	0.00	0.00	0.00			
		-33.85 L	-26.04	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.35	HS 30.87	55.6
HS20	2.90	9.53	2.57	10.59	HS 51.45	92.6
2F1	4.24	14.62	3.76	16.25	0.00	56.4
3F1	3.32	10.16	2.94	11.29	0.00	67.6
4F1	3.09	9.38	2.74	10.43	0.00	74.0
5C1	3.35	8.50	2.97	9.44	0.00	118.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

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

0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.5
OPER	151.3	-118.5	114.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.28	15.04	-7.14	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.28	15.04	-7.14	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.66	4.09	HS 81.70	147.1
HS20	12.77	6.81	HS 136.16	245.1
2F1	20.86	10.98	0.00	164.7
3F1	17.46	8.47	0.00	194.8
4F1	20.41	8.48	0.00	228.9
5C1	13.61	8.49	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 17.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00	
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00
OPER	HS20	97.00 R	74.62	113.00	0.0	77.32	59.48	85.00	
		-30.20 L	-23.23	42.00	0.0	-26.40	-20.31	65.00	0.00
OPER	2F1	66.33 R	51.02	95.00	0.0	0.00	0.00	0.00	
		-19.68 L	-15.14	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	95.00	0.0	0.00	0.00	0.00	
		-28.31 L	-21.78	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	99.00	0.0	0.00	0.00	0.00	
		-30.66 L	-23.59	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	97.00	0.0	0.00	0.00	0.00	
		-33.85 L	-26.04	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	5.93	1.61	5.93	HS 32.20	58.0
HS20	2.68	9.88	2.68	9.88	HS 53.67	96.6
2F1	3.92	15.17	3.92	15.17	0.00	58.9
3F1	3.07	10.54	3.07	10.54	0.00	70.5
4F1	2.86	9.73	2.86	9.73	0.00	77.2

5C1	3.10	8.82	3.10	8.82	0.00	124.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.500

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.500

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50			
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00		
OPER	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50			
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00		
OPER	2F1	67.42 R	51.86	97.50	0.0	0.00	0.00	0.00			
		-14.62 R	-11.25	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 L	69.35	77.50	0.0	0.00	0.00	0.00			
		-21.03 R	-16.18	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 L	72.44	73.50	0.0	0.00	0.00	0.00			
		-22.78 R	-17.52	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 R	66.15	138.50	0.0	0.00	0.00	0.00			
		-32.76 R	-25.20	118.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.77	7.65	1.56	8.49	HS 31.28	56.3
HS20	2.94	12.74	2.61	14.15	HS 52.13	93.8
2F1	4.14	19.87	3.66	22.06	0.00	54.9
3F1	3.09	13.81	2.74	15.33	0.00	63.0
4F1	2.96	12.75	2.62	14.16	0.00	70.8
5C1	3.24	8.87	2.87	9.84	0.00	114.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	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. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.08	12.10	-9.29	9.31
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.08	12.10	-9.29	9.31
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.18	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.34	191.4
HS20	8.87	8.86	HS 177.23	319.0
2F1	14.60	14.58	0.00	218.7
3F1	11.64	11.62	0.00	267.4
4F1	12.47	12.45	0.00	336.2
5C1	10.60	10.59	0.00	423.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.8	176.4	-158.9	176.4	-158.9	154.5	-180.8	154.5	-
OPER 301.3	279.4	-279.4	279.4	-279.4	257.5	-301.3	257.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50	
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00
OPER	HS20	94.68 R	72.83	101.50	0.0	82.22	63.25	87.50	
		-22.43 R	-17.26	133.00	0.0	-22.80	-17.53	110.00	0.00
OPER	2F1	67.42 R	51.86	97.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.25	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 L	69.35	77.50	0.0	0.00	0.00	0.00	
		-21.03 R	-16.18	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 L	72.44	73.50	0.0	0.00	0.00	0.00	
		-22.78 R	-17.52	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 R	66.15	138.50	0.0	0.00	0.00	0.00	
		-32.76 R	-25.20	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.63	7.93	1.63	7.93	HS 32.64	58.8
HS20	2.72	13.22	2.72	13.22	HS 54.40	97.9
2F1	3.82	20.60	3.82	20.60	0.00	57.3
3F1	2.86	14.32	2.86	14.32	0.00	65.7
4F1	2.73	13.22	2.73	13.22	0.00	73.8

5C1	2.99	9.19	2.99	9.19	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.600

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.600

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00			
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00		
OPER	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00			
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00		
OPER	2F1	66.33 L	51.02	80.00	0.0	0.00	0.00	0.00	0.00		
		-19.69 R	-15.14	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	80.00	0.0	0.00	0.00	0.00	0.00		
		-28.32 R	-21.79	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	76.00	0.0	0.00	0.00	0.00	0.00		
		-30.67 R	-23.60	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	78.00	0.0	0.00	0.00	0.00	0.00		
		-33.86 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.74	5.72	1.54	6.36	HS 30.85	55.5
HS20	2.90	9.53	2.57	10.59	HS 51.41	92.5
2F1	4.24	14.63	3.76	16.25	0.00	56.4
3F1	3.31	10.17	2.94	11.30	0.00	67.5
4F1	3.09	9.39	2.74	10.43	0.00	73.9
5C1	3.35	8.51	2.97	9.45	0.00	118.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.600	2F1	
		3F1	
		4F1	
		5C1	

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

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.01	9.31	-11.55	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.01	9.31	-11.55	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.75	147.2
HS20	6.81	12.73	HS 136.26	245.3
2F1	10.99	20.84	0.00	164.9
3F1	8.48	17.45	0.00	194.9
4F1	8.48	20.40	0.00	229.1
5C1	8.50	13.60	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00	
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00
OPER	HS20	97.01 L	74.62	62.00	0.0	77.41	59.55	90.00	
		-30.21 R	-23.24	133.00	0.0	-26.38	-20.29	110.00	0.00
OPER	2F1	66.33 L	51.02	80.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	80.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	76.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.60	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	78.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.93	1.61	5.93	HS 32.18	57.9
HS20	2.68	9.89	2.68	9.89	HS 53.63	96.5
2F1	3.92	15.17	3.92	15.17	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.5
4F1	2.86	9.74	2.86	9.74	0.00	77.1

5C1	3.10	8.82	3.10	8.82	0.00	123.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.7

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	173.4	-168.1	154.3	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.1	-280.2	257.1	-312.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50			
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00		
OPER	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50			
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00		
OPER	2F1	56.49 L	43.45	82.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	78.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	78.50	0.0	0.00	0.00	0.00			
		-38.57 R	-29.67	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 R	55.69	139.50	0.0	0.00	0.00	0.00			
		-36.34 R	-27.96	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.68	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.46	107.0
2F1	5.12	11.32	4.55	12.61	0.00	68.3
3F1	4.03	7.87	3.58	8.77	0.00	82.4
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.00	6.73	-13.85	5.18
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.00	6.73	-13.85	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.14	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.74	HS 65.49	117.9
HS20	5.46	17.90	HS 109.15	196.5
2F1	8.73	33.40	0.00	130.9
3F1	6.56	30.68	0.00	150.8
4F1	6.41	38.33	0.00	173.1
5C1	6.80	18.22	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50	
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00
OPER	HS20	86.48 L	66.52	64.50	0.0	65.18	50.14	92.50	
		-37.98 R	-29.21	133.00	0.0	-29.97	-23.05	110.00	0.00
OPER	2F1	56.49 L	43.45	82.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	78.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	78.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 R	55.69	139.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.96	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.17	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.94	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.54	3.63	7.54	0.00	98.1

5C1	3.70	8.01	3.70	8.01	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.800

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

Non-Composite Structural Steel Section Properties:

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.800

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.800 2F1
 3F1
 4F1
 5C1

Dead Load 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	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00			
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00		
OPER	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00			
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00		
OPER	2F1	38.39 L	29.53	85.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	117.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 L	36.02	81.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	120.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 L	33.18	81.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	123.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 R	41.85	142.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	122.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.52	98.1
HS20	5.08	5.84	4.54	6.54	HS 90.86	163.5
2F1	7.87	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.6
4F1	7.00	5.75	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.43	0.00	198.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.14	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.49	HS 52.06	93.7
HS20	4.34	27.49	HS 86.76	156.2
2F1	7.22	60.52	0.00	108.4
3F1	5.31	42.06	0.00	122.1
4F1	5.17	38.98	0.00	139.6
5C1	5.59	25.79	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00	
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00
OPER	HS20	59.43 L	45.72	67.00	0.0	45.27	34.83	95.00	
		-45.75 R	-35.19	133.00	0.0	-35.40	-27.23	110.00	160.00
OPER	2F1	38.39 L	29.53	85.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	81.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	81.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	142.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.69	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.48	170.1
2F1	7.31	9.32	7.31	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.99	6.51	5.99	0.00	161.6

5C1	5.16	6.91	5.16	6.91	0.00	206.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.900

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 4.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50			
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50		
OPER	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50			
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50		
OPER	2F1	13.49 L	10.37	87.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	117.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 R	10.34	145.00	0.0	0.00	0.00	0.00			
		-50.18 R	-38.60	120.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.36 R	11.04	149.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	123.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.16 R	21.66	144.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	124.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	7.60	2.54	6.84	2.86	HS 50.71	91.3
HS20	12.67	4.23	11.40	4.77	HS 84.52	152.1
2F1	23.73	7.14	21.36	8.06	0.00	107.2
3F1	23.80	4.97	21.42	5.60	0.00	114.2
4F1	22.30	4.59	20.07	5.17	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.3	-108.1	124.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.11	-23.17	2.39	-23.76	3.21	-18.28	2.47
OPER	HS20	-30.11	3.11	-23.17	2.39	-23.76	3.21	-18.28	2.47
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.27	HS 43.08	77.5
HS20	3.59	38.78	HS 71.80	129.2
2F1	6.18	61.54	0.00	92.8
3F1	4.46	42.78	0.00	102.5
4F1	4.30	39.49	0.00	116.0
5C1	4.72	39.40	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 4.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50	
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50
OPER	HS20	16.20 L	12.46	69.50	0.0	25.27	19.44	97.50	
		-58.98 L	-45.37	91.00	0.0	-54.00	-41.54	110.00	87.50
OPER	2F1	13.49 L	10.37	87.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	145.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 R	11.04	149.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	144.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.10	2.64	7.10	2.64	HS 52.90	95.2
HS20	11.83	4.41	11.83	4.41	HS 88.16	158.7
2F1	22.16	7.45	22.16	7.45	0.00	111.8
3F1	22.22	5.18	22.22	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1	10.61	5.56	10.61	5.56	0.00	222.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.480

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -39.4

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	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.92	3.80	24.41	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.17	26.56	-23.76	26.34	-18.28	20.26
OPER	HS20	-30.11	34.53	-23.17	26.56	-23.76	26.34	-18.28	20.26
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.25	3.98	25.25	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00			
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00		
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00			
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00			
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00			
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.92	3.80	24.41	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000HS20 HS20
2F1
3F1
4F1
5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.34	-20.25	20.26
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.34	-20.25	20.26
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	HS20	16.42 R	12.63	158.00	0.0	16.69	12.84	135.00	
		-98.55 L	-75.81	79.50	0.0	-90.47	-69.59	110.00	90.00
OPER	2F1	10.70 R	8.23	142.50	0.0	0.00	0.00	0.00	
		-39.95 R	-30.73	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 R	11.85	145.00	0.0	0.00	0.00	0.00	
		-63.21 L	-48.62	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 R	12.83	148.00	0.0	0.00	0.00	0.00	
		-74.73 L	-57.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 R	9.81	184.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.25	3.98	25.25	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.100

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.100

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50			
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50		
OPER	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50			
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50		
OPER	2F1	13.49 R	10.37	112.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.44 L	10.34	55.00	0.0	0.00	0.00	0.00			
		-50.18 L	-38.60	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.35 L	11.04	51.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.81	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.16 L	21.66	55.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.98	75.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	7.47	2.54	6.72	2.86	HS 50.72	91.3
HS20	12.45	4.23	11.20	4.77	HS 84.54	152.2
2F1	23.73	7.15	21.35	8.06	0.00	107.2
3F1	23.81	4.97	21.43	5.61	0.00	114.3
4F1	22.30	4.59	20.07	5.18	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.100		2F1
			3F1
			4F1
			5C1

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

0.6	0.0	7.7
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.21	23.77	-2.47	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.21	23.77	-2.47	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.29	2.15	HS 43.07	77.5
HS20	38.82	3.59	HS 71.78	129.2
2F1	61.53	6.18	0.00	92.7
3F1	42.77	4.45	0.00	102.5
4F1	39.64	4.30	0.00	116.0
5C1	39.40	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 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	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50	
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50
OPER	HS20	16.20 R	12.46	130.50	0.0	25.71	19.77	102.50	
		-58.98 R	-45.37	109.00	0.0	-54.00	-41.54	90.00	112.50
OPER	2F1	13.49 R	10.37	112.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.44 L	10.34	55.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 L	11.04	51.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	55.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.97	2.65	6.97	2.65	HS 52.91	95.2
HS20	11.62	4.41	11.62	4.41	HS 88.19	158.7
2F1	22.15	7.45	22.15	7.45	0.00	111.8
3F1	22.23	5.18	22.23	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1	10.61	5.56	10.61	5.56	0.00	222.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.200

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.200

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00			
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00		
OPER	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00			
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00		
OPER	2F1	38.39 R	29.53	115.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 R	36.02	119.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 R	33.18	119.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.40 L	41.85	58.00	0.0	0.00	0.00	0.00			
		-40.27 L	-30.97	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.49	98.1
HS20	5.08	5.85	4.54	6.55	HS 90.82	163.5
2F1	7.86	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.24	5.76	6.98	0.00	132.6
4F1	7.00	5.76	6.26	6.45	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

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

0.5	0.0	5.8
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.96	-3.43	16.12
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.96	-3.43	16.12
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.51	2.60	HS 52.04	93.7
HS20	27.51	4.34	HS 86.74	156.1
2F1	60.51	7.22	0.00	108.3
3F1	42.06	5.30	0.00	122.0
4F1	38.98	5.17	0.00	139.6
5C1	25.79	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	HS20	59.43 R	45.72	133.00	0.0	44.77	34.44	105.00	
		-45.75 L	-35.19	67.00	0.0	-35.33	-27.18	90.00	40.00
OPER	2F1	38.39 R	29.53	115.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	119.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	119.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	58.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.66	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.43	170.0
2F1	7.31	9.33	7.31	9.33	0.00	109.7
3F1	5.99	6.49	5.99	6.49	0.00	137.8
4F1	6.51	5.99	6.51	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50			
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00		
OPER	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50			
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00		
OPER	2F1	56.49 R	43.46	117.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	121.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	121.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	60.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.93	HS 35.65	64.2
HS20	3.34	7.38	2.97	8.23	HS 59.41	106.9
2F1	5.11	11.33	4.55	12.62	0.00	68.2
3F1	4.02	7.88	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.48	8.10	0.00	94.1
5C1	3.99	7.72	3.55	8.60	0.00	141.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.5	112.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.01	-5.18	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.01	-5.18	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.27	HS 65.47	117.8
HS20	17.91	5.46	HS 109.12	196.4
2F1	33.41	8.73	0.00	130.9
3F1	30.69	6.55	0.00	150.8
4F1	38.32	6.41	0.00	173.1
5C1	18.23	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01

Check Point I. D. 5.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.9

Superimposed Dead Load Moment 10.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50	
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00
OPER	HS20	86.48 R	66.52	135.50	0.0	65.23	50.17	107.50	
		-37.98 L	-29.21	67.00	0.0	-29.90	-23.00	90.00	0.00
OPER	2F1	56.49 R	43.46	117.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	121.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	121.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	60.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.14	66.8
HS20	3.10	7.67	3.10	7.67	HS 61.90	111.4
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.400

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.400

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.79		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00			
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00		
OPER	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00			
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00		
OPER	2F1	66.33 R	51.02	120.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	120.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	124.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	122.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS	55.5
HS20	2.90	9.54	2.57	10.60	HS	92.4
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.18	2.93	11.31	0.00	67.5
4F1	3.09	9.40	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.46	0.00	118.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

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

0.2	0.0	1.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.03	-7.16	11.56
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.03	-7.16	11.56
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.73	147.1
HS20	12.73	6.81	HS 136.22	245.2
2F1	20.85	10.99	0.00	164.8
3F1	17.45	8.47	0.00	194.9
4F1	20.40	8.48	0.00	229.0
5C1	13.61	8.49	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00	
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00
OPER	HS20	97.01 R	74.62	138.00	0.0	77.50	59.62	110.00	
		-30.21 L	-23.24	67.00	0.0	-26.32	-20.25	90.00	0.00
OPER	2F1	66.33 R	51.02	120.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	120.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	124.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	122.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.94	1.61	5.94	HS 32.14	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.57	96.4
2F1	3.92	15.19	3.92	15.19	0.00	58.8
3F1	3.06	10.56	3.06	10.56	0.00	70.4
4F1	2.85	9.75	2.85	9.75	0.00	77.0

5C1	3.09	8.83	3.09	8.83	0.00	123.8
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.500

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.465

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50			
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00		
OPER	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50			
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00		
OPER	2F1	67.42 L	51.86	102.50	0.0	0.00	0.00	0.00	0.00		
		-14.62 R	-11.25	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 R	69.35	122.50	0.0	0.00	0.00	0.00	0.00		
		-21.04 R	-16.18	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 R	72.44	126.50	0.0	0.00	0.00	0.00	0.00		
		-22.78 R	-17.52	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 R	66.16	163.50	0.0	0.00	0.00	0.00	0.00		
		-32.77 R	-25.20	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.68	1.56	8.52	HS 31.24	56.2
HS20	2.94	12.79	2.60	14.20	HS 52.06	93.7
2F1	4.13	19.89	3.66	22.08	0.00	54.8
3F1	3.09	13.83	2.73	15.35	0.00	62.9
4F1	2.96	12.77	2.62	14.17	0.00	70.7
5C1	3.24	8.88	2.87	9.85	0.00	114.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.500	2F1	
		3F1	
		4F1	
		5C1	

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.09	-9.31	9.30
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.09	-9.31	9.30
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.38	191.5
HS20	8.87	8.86	HS 177.31	319.2
2F1	14.59	14.59	0.00	218.8
3F1	11.63	11.63	0.00	267.5
4F1	12.46	12.46	0.00	336.3
5C1	10.60	10.59	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 20.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50	
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00
OPER	HS20	94.68 L	72.83	98.50	0.0	82.35	63.34	112.50	
		-22.43 R	-17.26	158.00	0.0	-22.73	-17.49	135.00	0.00
OPER	2F1	67.42 L	51.86	102.50	0.0	0.00	0.00	0.00	
		-14.62 R	-11.25	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	122.50	0.0	0.00	0.00	0.00	
		-21.04 R	-16.18	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	126.50	0.0	0.00	0.00	0.00	
		-22.78 R	-17.52	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 R	66.16	163.50	0.0	0.00	0.00	0.00	
		-32.77 R	-25.20	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.63	7.96	1.63	7.96	HS 32.60	58.7
HS20	2.72	13.27	2.72	13.27	HS 54.33	97.8
2F1	3.82	20.63	3.82	20.63	0.00	57.2
3F1	2.85	14.34	2.85	14.34	0.00	65.6
4F1	2.73	13.24	2.73	13.24	0.00	73.7

5C1	2.99	9.20	2.99	9.20	0.00	119.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.600

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.600

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00			
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00		
OPER	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00			
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00		
OPER	2F1	66.33 L	51.02	105.00	0.0	0.00	0.00	0.00			
		-19.69 R	-15.14	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	105.00	0.0	0.00	0.00	0.00			
		-28.32 R	-21.79	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	101.00	0.0	0.00	0.00	0.00			
		-30.67 R	-23.60	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	103.00	0.0	0.00	0.00	0.00			
		-33.86 R	-26.05	144.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS 30.82	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.37	92.5
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.17	2.93	11.30	0.00	67.5
4F1	3.09	9.39	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.45	0.00	118.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.600		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	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.29	-11.56	7.15
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.29	-11.56	7.15
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.65	HS 81.71	147.1
HS20	6.81	12.75	HS 136.19	245.1
2F1	10.98	20.85	0.00	164.8
3F1	8.47	17.45	0.00	194.9
4F1	8.48	20.41	0.00	229.0
5C1	8.49	13.61	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00	
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00
OPER	HS20	97.01 L	74.62	87.00	0.0	77.49	59.61	115.00	
		-30.21 R	-23.24	158.00	0.0	-26.34	-20.27	135.00	0.00
OPER	2F1	66.33 L	51.02	105.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	105.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	101.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.60	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	103.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.05	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.94	1.61	5.94	HS 32.15	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.58	96.5
2F1	3.92	15.18	3.92	15.18	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.4
4F1	2.85	9.74	2.85	9.74	0.00	77.0

5C1	3.10	8.83	3.10	8.83	0.00	123.8
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.700

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50			
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00		
OPER	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50			
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00		
OPER	2F1	56.49 L	43.46	107.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	103.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	103.50	0.0	0.00	0.00	0.00			
		-38.57 R	-29.67	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 R	55.69	164.50	0.0	0.00	0.00	0.00			
		-36.35 R	-27.96	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.67	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.44	107.0
2F1	5.12	11.32	4.55	12.62	0.00	68.2
3F1	4.03	7.87	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.72	-13.86	5.17
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.72	-13.86	5.17
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.76	HS 65.46	117.8
HS20	5.45	17.93	HS 109.09	196.4
2F1	8.73	33.41	0.00	130.9
3F1	6.55	30.70	0.00	150.7
4F1	6.41	38.33	0.00	173.0
5C1	6.80	18.23	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50	
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00
OPER	HS20	86.48 L	66.52	89.50	0.0	65.20	50.15	117.50	
		-37.98 R	-29.21	158.00	0.0	-29.95	-23.04	135.00	0.00
OPER	2F1	56.49 L	43.46	107.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	103.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	103.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 R	55.69	164.50	0.0	0.00	0.00	0.00	
		-36.35 R	-27.96	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.16	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.93	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.800

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.800

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00			
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00		
OPER	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00			
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00		
OPER	2F1	38.39 L	29.53	110.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 L	36.02	106.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	145.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 L	33.18	106.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	148.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 R	41.85	167.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	147.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.45	-16.13	3.42
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.45	-16.13	3.42
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.54	HS 52.03	93.7
HS20	4.34	27.57	HS 86.72	156.1
2F1	7.22	60.52	0.00	108.3
3F1	5.30	42.07	0.00	122.0
4F1	5.17	38.99	0.00	139.5
5C1	5.59	25.79	0.00	223.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00	
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00
OPER	HS20	59.43 L	45.72	92.00	0.0	45.25	34.81	120.00	
		-45.75 R	-35.19	158.00	0.0	-35.42	-27.24	135.00	185.00
OPER	2F1	38.39 L	29.53	110.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	106.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	106.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	167.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1	5.16	6.90	5.16	6.90	0.00	206.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.900

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.900

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 5.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50			
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50		
OPER	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50			
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50		
OPER	2F1	13.49 L	10.37	112.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 R	10.34	170.00	0.0	0.00	0.00	0.00			
		-50.18 R	-38.60	145.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.35 R	11.04	174.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	148.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.16 R	21.66	169.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	149.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.62	2.53	6.86	2.86	HS 50.67	91.2
HS20	12.70	4.22	11.43	4.76	HS 84.45	152.0
2F1	23.75	7.14	21.38	8.06	0.00	107.1
3F1	23.82	4.96	21.44	5.60	0.00	114.1
4F1	22.31	4.58	20.08	5.17	0.00	123.7
5C1	11.37	5.32	10.24	6.01	0.00	213.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.20	-18.29	2.46
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.20	-18.29	2.46
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.35	HS 43.06	77.5
HS20	3.59	38.92	HS 71.76	129.2
2F1	6.18	61.54	0.00	92.7
3F1	4.45	42.78	0.00	102.4
4F1	4.30	39.50	0.00	116.0
5C1	4.72	39.41	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 5.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50	
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50
OPER	HS20	16.20 L	12.46	94.50	0.0	25.22	19.40	122.50	
		-58.98 L	-45.37	116.00	0.0	-54.07	-41.59	135.00	112.50
OPER	2F1	13.49 L	10.37	112.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 R	10.34	170.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 R	11.04	174.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	169.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.11	2.64	7.11	2.64	HS 52.86	95.1
HS20	11.86	4.41	11.86	4.41	HS 88.09	158.6
2F1	22.17	7.45	22.17	7.45	0.00	111.7
3F1	22.24	5.18	22.24	5.18	0.00	119.1
4F1	20.83	4.78	20.83	4.78	0.00	129.1

5C1	10.62	5.55	10.62	5.55	0.00	222.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.000

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

Non-Composite Structural Steel Section Properties:

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.000

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -39.7

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	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.41	1.37	11.25	1.57	HS 27.47	49.5
HS20	20.68	2.29	18.76	2.61	HS 45.79	82.4
2F1	32.10	5.65	29.12	6.45	0.00	84.7
3F1	22.32	3.57	20.24	4.08	0.00	82.1
4F1	20.60	3.02	18.69	3.45	0.00	81.5
5C1	26.95	3.79	24.44	4.33	0.00	151.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.83	66.3
HS20	3.07	3.07	HS 61.39	110.5
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.64	1.44	11.64	1.44	HS 28.78	51.8
HS20	19.40	2.40	19.40	2.40	HS 47.97	86.3
2F1	30.12	5.92	30.12	5.92	0.00	88.8
3F1	20.94	3.74	20.94	3.74	0.00	86.0
4F1	19.33	3.16	19.33	3.16	0.00	85.4

5C1	25.28	3.97	25.28	3.97	0.00	158.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.000

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -39.7

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	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00			
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00		
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00			
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.41	1.37	11.25	1.57	HS 27.47	49.5
HS20	20.68	2.29	18.76	2.61	HS 45.79	82.4
2F1	32.10	5.65	29.12	6.45	0.00	84.7
3F1	22.32	3.57	20.24	4.08	0.00	82.1
4F1	20.60	3.02	18.69	3.45	0.00	81.5
5C1	26.95	3.79	24.44	4.33	0.00	151.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.83	66.3
HS20	3.07	3.07	HS 61.39	110.5
2F1	5.45	5.45	0.00	81.7
3F1	3.86	3.86	0.00	88.7
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	HS20	16.42 L	12.63	67.00	0.0	16.62	12.78	90.00	
		-98.55 R	-75.81	145.50	0.0	-90.58	-69.68	115.00	135.00
OPER	2F1	10.70 L	8.23	82.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	80.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	77.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	40.50	0.0	0.00	0.00	0.00	
		-59.51 R	-45.78	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.64	1.44	11.64	1.44	HS 28.78	51.8
HS20	19.40	2.40	19.40	2.40	HS 47.97	86.3
2F1	30.12	5.92	30.12	5.92	0.00	88.8
3F1	20.94	3.74	20.94	3.74	0.00	86.0
4F1	19.33	3.16	19.33	3.16	0.00	85.4

5C1	25.28	3.97	25.28	3.97	0.00	158.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.100

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.100

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50			
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50		
OPER	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50			
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50		
OPER	2F1	13.49 R	10.37	137.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 L	10.34	80.00	0.0	0.00	0.00	0.00			
		-50.18 L	-38.60	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.36 L	11.04	76.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.81	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.16 L	21.66	80.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.98	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	7.49	2.53	6.74	2.86	HS 50.67	91.2
HS20	12.49	4.22	11.24	4.76	HS 84.45	152.0
2F1	23.75	7.14	21.38	8.06	0.00	107.1
3F1	23.82	4.96	21.44	5.60	0.00	114.1
4F1	22.31	4.58	20.08	5.17	0.00	123.7
5C1	11.37	5.32	10.24	6.01	0.00	213.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

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

0.6	0.0	7.7
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.20	23.78	-2.46	18.29
OPER	HS20	-2.98	30.12	-2.29	23.17	-3.20	23.78	-2.46	18.29
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.35	2.15	HS 43.06	77.5
HS20	38.92	3.59	HS 71.76	129.2
2F1	61.54	6.18	0.00	92.7
3F1	42.78	4.45	0.00	102.4
4F1	39.65	4.30	0.00	116.0
5C1	39.41	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50	
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50
OPER	HS20	16.20 R	12.46	155.50	0.0	25.65	19.73	127.50	
		-58.98 R	-45.37	134.00	0.0	-54.09	-41.61	115.00	137.50
OPER	2F1	13.49 R	10.37	137.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	80.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	76.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	80.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.99	2.64	6.99	2.64	HS 52.85	95.1
HS20	11.66	4.41	11.66	4.41	HS 88.09	158.6
2F1	22.17	7.45	22.17	7.45	0.00	111.7
3F1	22.24	5.18	22.24	5.18	0.00	119.1
4F1	20.83	4.78	20.83	4.78	0.00	129.0

5C1	10.62	5.55	10.62	5.55	0.00	222.2
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.200

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00			
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00		
OPER	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00			
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00		
OPER	2F1	38.39 R	29.53	140.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 R	36.02	144.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 R	33.18	144.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.40 L	41.85	83.00	0.0	0.00	0.00	0.00			
		-40.27 L	-30.97	103.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.200		2F1
			3F1
			4F1
			5C1

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

0.5	0.0	5.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.45	20.97	-3.42	16.13
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.45	20.97	-3.42	16.13
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.54	2.60	HS 52.03	93.7
HS20	27.57	4.34	HS 86.72	156.1
2F1	60.52	7.22	0.00	108.3
3F1	42.07	5.30	0.00	122.0
4F1	38.99	5.17	0.00	139.5
5C1	25.79	5.59	0.00	223.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00	
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00
OPER	HS20	59.43 R	45.72	158.00	0.0	44.74	34.41	130.00	
		-45.75 L	-35.19	92.00	0.0	-35.41	-27.24	115.00	65.00
OPER	2F1	38.39 R	29.53	140.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	144.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	144.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	83.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1	5.16	6.90	5.16	6.90	0.00	206.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.300

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.300

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50			
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00		
OPER	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50			
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00		
OPER	2F1	56.49 R	43.46	142.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	146.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	146.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	85.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.67	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.44	107.0
2F1	5.12	11.32	4.55	12.62	0.00	68.2
3F1	4.03	7.87	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.72	18.02	-5.17	13.86
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.72	18.02	-5.17	13.86
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.15	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.76	3.27	HS 65.46	117.8
HS20	17.93	5.45	HS 109.09	196.4
2F1	33.41	8.73	0.00	130.9
3F1	30.70	6.55	0.00	150.7
4F1	38.33	6.41	0.00	173.0
5C1	18.23	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50	
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00
OPER	HS20	86.48 R	66.52	160.50	0.0	65.20	50.15	132.50	
		-37.98 L	-29.21	92.00	0.0	-29.96	-23.04	115.00	0.00
OPER	2F1	56.49 R	43.46	142.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	146.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	146.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	85.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.16	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.93	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.400

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.400

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.580

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.23		104.3

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00			
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00		
OPER	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00			
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00		
OPER	2F1	66.33 R	51.02	145.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 R	65.32	145.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 R	70.07	149.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 R	64.60	147.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.05	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.36	HS 30.82	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.37	92.5
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.17	2.93	11.30	0.00	67.5
4F1	3.09	9.39	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.45	0.00	118.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

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

0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.03	-7.15	11.56
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.03	-7.15	11.56
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.65	4.09	HS 81.71	147.1
HS20	12.75	6.81	HS 136.19	245.1
2F1	20.85	10.98	0.00	164.8
3F1	17.45	8.47	0.00	194.9
4F1	20.41	8.48	0.00	229.0
5C1	13.61	8.49	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00	
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00
OPER	HS20	97.01 R	74.62	163.00	0.0	77.49	59.61	135.00	
		-30.21 L	-23.24	92.00	0.0	-26.35	-20.27	115.00	0.00
OPER	2F1	66.33 R	51.02	145.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	145.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	149.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	147.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.05	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.94	1.61	5.94	HS 32.15	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.58	96.5
2F1	3.92	15.18	3.92	15.18	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.4
4F1	2.85	9.74	2.85	9.74	0.00	77.0

5C1	3.10	8.83	3.10	8.83	0.00	123.8
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.500

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50			
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00		
OPER	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50			
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00		
OPER	2F1	67.42 L	51.86	127.50	0.0	0.00	0.00	0.00			
		-14.62 L	-11.25	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 R	69.35	147.50	0.0	0.00	0.00	0.00			
		-21.04 L	-16.18	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 R	72.44	151.50	0.0	0.00	0.00	0.00			
		-22.78 L	-17.52	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 L	66.16	86.50	0.0	0.00	0.00	0.00			
		-32.77 L	-25.20	106.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.68	1.56	8.52	HS 31.24	56.2
HS20	2.94	12.79	2.60	14.20	HS 52.06	93.7
2F1	4.13	19.89	3.66	22.08	0.00	54.8
3F1	3.09	13.83	2.73	15.35	0.00	62.9
4F1	2.96	12.77	2.62	14.17	0.00	70.7
5C1	3.24	8.88	2.87	9.85	0.00	114.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

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

0.0	0.0	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.09	12.10	-9.30	9.31
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.09	12.10	-9.30	9.31
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.19	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.36	191.4
HS20	8.87	8.86	HS 177.27	319.1
2F1	14.60	14.58	0.00	218.7
3F1	11.64	11.63	0.00	267.4
4F1	12.46	12.45	0.00	336.3
5C1	10.60	10.59	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 20.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50	
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00
OPER	HS20	94.68 L	72.83	123.50	0.0	82.35	63.34	137.50	
		-22.44 L	-17.26	92.00	0.0	-22.73	-17.49	115.00	0.00
OPER	2F1	67.42 L	51.86	127.50	0.0	0.00	0.00	0.00	
		-14.62 L	-11.25	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	147.50	0.0	0.00	0.00	0.00	
		-21.04 L	-16.18	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	151.50	0.0	0.00	0.00	0.00	
		-22.78 L	-17.52	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 L	66.16	86.50	0.0	0.00	0.00	0.00	
		-32.77 L	-25.20	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.63	7.96	1.63	7.96	HS 32.60	58.7
HS20	2.72	13.27	2.72	13.27	HS 54.33	97.8
2F1	3.82	20.63	3.82	20.63	0.00	57.2
3F1	2.85	14.34	2.85	14.34	0.00	65.6
4F1	2.73	13.24	2.73	13.24	0.00	73.7

5C1	2.99	9.20	2.99	9.20	0.00	119.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.600

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.600

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00			
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00		0.00	
OPER	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00			
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00		0.00	
OPER	2F1	66.33 L	51.02	130.00	0.0	0.00	0.00	0.00		0.00	
		-19.69 R	-15.14	167.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	84.91 L	65.32	130.00	0.0	0.00	0.00	0.00		0.00	
		-28.32 R	-21.79	170.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	91.09 L	70.07	126.00	0.0	0.00	0.00	0.00		0.00	
		-30.67 R	-23.59	173.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	83.98 L	64.60	128.00	0.0	0.00	0.00	0.00		0.00	
		-33.86 R	-26.05	169.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.74	5.72	1.54	6.36	HS 30.81	55.5
HS20	2.90	9.54	2.57	10.60	HS 51.36	92.4
2F1	4.24	14.64	3.76	16.26	0.00	56.3
3F1	3.31	10.18	2.93	11.31	0.00	67.5
4F1	3.09	9.40	2.73	10.44	0.00	73.8
5C1	3.35	8.51	2.97	9.46	0.00	118.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.600	2F1	
		3F1	
		4F1	
		5C1	

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.30	-11.56	7.16
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.30	-11.56	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.64	HS 81.73	147.1
HS20	6.81	12.73	HS 136.22	245.2
2F1	10.99	20.85	0.00	164.8
3F1	8.47	17.45	0.00	194.9
4F1	8.48	20.40	0.00	229.0
5C1	8.49	13.61	0.00	339.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 6.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00	
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00
OPER	HS20	97.01 L	74.62	112.00	0.0	77.50	59.62	140.00	
		-30.21 R	-23.24	183.00	0.0	-26.32	-20.25	160.00	0.00
OPER	2F1	66.33 L	51.02	130.00	0.0	0.00	0.00	0.00	
		-19.69 R	-15.14	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	130.00	0.0	0.00	0.00	0.00	
		-28.32 R	-21.79	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	126.00	0.0	0.00	0.00	0.00	
		-30.67 R	-23.59	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	128.00	0.0	0.00	0.00	0.00	
		-33.86 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.94	1.61	5.94	HS 32.14	57.9
HS20	2.68	9.90	2.68	9.90	HS 53.57	96.4
2F1	3.92	15.19	3.92	15.19	0.00	58.8
3F1	3.06	10.56	3.06	10.56	0.00	70.4
4F1	2.85	9.75	2.85	9.75	0.00	77.0

5C1	3.09	8.83	3.09	8.83	0.00	123.8
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.700

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.9 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50			
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00		
OPER	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50			
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00		
OPER	2F1	56.49 L	43.46	132.50	0.0	0.00	0.00	0.00			
		-24.75 R	-19.04	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	128.50	0.0	0.00	0.00	0.00			
		-35.61 R	-27.39	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	128.50	0.0	0.00	0.00	0.00			
		-38.57 R	-29.67	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.39 R	55.69	189.50	0.0	0.00	0.00	0.00			
		-36.34 R	-27.96	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.00	4.43	1.78	4.93	HS 35.65	64.2
HS20	3.34	7.38	2.97	8.23	HS 59.41	106.9
2F1	5.11	11.33	4.55	12.62	0.00	68.2
3F1	4.02	7.88	3.58	8.77	0.00	82.3
4F1	3.92	7.27	3.48	8.10	0.00	94.1
5C1	3.99	7.72	3.55	8.60	0.00	141.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.01	6.73	-13.86	5.18
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.01	6.73	-13.86	5.18
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.46	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.74	HS 65.47	117.8
HS20	5.46	17.91	HS 109.12	196.4
2F1	8.73	33.41	0.00	130.9
3F1	6.55	30.69	0.00	150.8
4F1	6.41	38.32	0.00	173.1
5C1	6.80	18.23	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 10.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50	
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00
OPER	HS20	86.48 L	66.52	114.50	0.0	65.23	50.17	142.50	
		-37.98 R	-29.21	183.00	0.0	-29.90	-23.00	160.00	0.00
OPER	2F1	56.49 L	43.46	132.50	0.0	0.00	0.00	0.00	
		-24.75 R	-19.04	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	128.50	0.0	0.00	0.00	0.00	
		-35.61 R	-27.39	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	128.50	0.0	0.00	0.00	0.00	
		-38.57 R	-29.67	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 R	55.69	189.50	0.0	0.00	0.00	0.00	
		-36.34 R	-27.96	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.14	66.8
HS20	3.10	7.67	3.10	7.67	HS 61.90	111.4
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	98.0

5C1	3.70	8.01	3.70	8.01	0.00	147.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.800

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

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.800

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00			
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00	210.00		
OPER	HS20	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00			
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00	210.00		
OPER	2F1	38.39 L	29.53	135.00	0.0	0.00	0.00	0.00			
		-29.82 R	-22.94	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 L	36.02	131.00	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 L	33.18	131.00	0.0	0.00	0.00	0.00			
		-46.46 R	-35.74	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 R	41.85	192.00	0.0	0.00	0.00	0.00			
		-40.27 R	-30.97	172.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.49	98.1
HS20	5.08	5.85	4.54	6.55	HS 90.82	163.5
2F1	7.86	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.24	5.76	6.98	0.00	132.6
4F1	7.00	5.76	6.26	6.45	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.5	-5.8	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.96	4.46	-16.12	3.43
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.96	4.46	-16.12	3.43
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.51	HS 52.04	93.7
HS20	4.34	27.51	HS 86.74	156.1
2F1	7.22	60.51	0.00	108.3
3F1	5.30	42.06	0.00	122.0
4F1	5.17	38.98	0.00	139.6
5C1	5.59	25.79	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00	
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00	210.00
OPER	HS20	59.43 L	45.72	117.00	0.0	45.29	34.84	145.00	
		-45.75 R	-35.19	183.00	0.0	-35.34	-27.18	160.00	210.00
OPER	2F1	38.39 L	29.53	135.00	0.0	0.00	0.00	0.00	
		-29.82 R	-22.94	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.02	131.00	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.18	131.00	0.0	0.00	0.00	0.00	
		-46.46 R	-35.74	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 R	41.85	192.00	0.0	0.00	0.00	0.00	
		-40.27 R	-30.97	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.66	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.43	170.0
2F1	7.31	9.33	7.31	9.33	0.00	109.7
3F1	5.99	6.49	5.99	6.49	0.00	137.8
4F1	6.51	5.99	6.51	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50			
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50		
OPER	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50			
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50		
OPER	2F1	13.49 L	10.37	137.50	0.0	0.00	0.00	0.00			
		-34.88 R	-26.83	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.44 R	10.34	195.00	0.0	0.00	0.00	0.00			
		-50.18 R	-38.60	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.35 R	11.04	199.00	0.0	0.00	0.00	0.00			
		-54.35 R	-41.81	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.16 R	21.66	194.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.97	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.60	2.54	6.84	2.86	HS 50.72	91.3
HS20	12.66	4.23	11.40	4.77	HS 84.54	152.2
2F1	23.73	7.15	21.35	8.06	0.00	107.2
3F1	23.81	4.97	21.43	5.61	0.00	114.3
4F1	22.30	4.59	20.07	5.18	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.77	3.21	-18.29	2.47
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.77	3.21	-18.29	2.47
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.29	HS 43.07	77.5
HS20	3.59	38.82	HS 71.78	129.2
2F1	6.18	61.53	0.00	92.7
3F1	4.45	42.77	0.00	102.5
4F1	4.30	39.49	0.00	116.0
5C1	4.72	39.40	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 6.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 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	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50	
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50
OPER	HS20	16.20 L	12.46	119.50	0.0	25.28	19.44	147.50	
		-58.98 L	-45.37	141.00	0.0	-53.97	-41.52	160.00	137.50
OPER	2F1	13.49 L	10.37	137.50	0.0	0.00	0.00	0.00	
		-34.88 R	-26.83	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.44 R	10.34	195.00	0.0	0.00	0.00	0.00	
		-50.18 R	-38.60	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.35 R	11.04	199.00	0.0	0.00	0.00	0.00	
		-54.35 R	-41.81	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 R	21.66	194.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.97	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.09	2.65	7.09	2.65	HS 52.91	95.2
HS20	11.82	4.41	11.82	4.41	HS 88.19	158.7
2F1	22.15	7.45	22.15	7.45	0.00	111.8
3F1	22.23	5.18	22.23	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.2

5C1	10.61	5.56	10.61	5.56	0.00	222.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00			
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.82	3.80	24.32	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.77	26.33	-18.29	20.25
OPER	HS20	-30.12	34.53	-23.17	26.56	-23.77	26.33	-18.29	20.25
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.05	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00	
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.16	3.98	25.16	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00			
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00		
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00			
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.34	1.38	11.19	1.57	HS 27.52	49.5
HS20	20.57	2.29	18.65	2.62	HS 45.86	82.5
2F1	32.07	5.66	29.08	6.46	0.00	84.9
3F1	22.29	3.58	20.22	4.08	0.00	82.2
4F1	20.58	3.02	18.67	3.45	0.00	81.7
5C1	26.82	3.80	24.32	4.34	0.00	151.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.34	26.33	-20.26	20.25
OPER	HS20	-34.53	34.53	-26.56	26.56	-26.34	26.33	-20.26	20.25
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.05	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.84	66.3
HS20	3.07	3.07	HS 61.41	110.5
2F1	5.45	5.45	0.00	81.8
3F1	3.86	3.86	0.00	88.8
4F1	3.65	3.65	0.00	98.5
5C1	4.08	4.08	0.00	163.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	HS20	16.42 L	12.63	92.00	0.0	16.69	12.84	115.00	
		-98.55 L	-75.81	129.50	0.0	-90.47	-69.59	140.00	160.00
OPER	2F1	10.70 L	8.23	107.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	105.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	102.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.80 R	9.85	234.50	0.0	0.00	0.00	0.00	
		-59.51 L	-45.78	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.58	1.44	11.58	1.44	HS 28.82	51.9
HS20	19.30	2.40	19.30	2.40	HS 48.04	86.5
2F1	30.09	5.93	30.09	5.93	0.00	88.9
3F1	20.92	3.74	20.92	3.74	0.00	86.1
4F1	19.31	3.17	19.31	3.17	0.00	85.5

5C1	25.16	3.98	25.16	3.98	0.00	159.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50			
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50		
OPER	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50			
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50		
OPER	2F1	13.49 R	10.37	162.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	132.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.45 L	10.34	105.00	0.0	0.00	0.00	0.00			
		-50.18 L	-38.60	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.36 L	11.04	101.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.81	127.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.16 L	21.66	105.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.98	125.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.47	2.54	6.73	2.86	HS 50.71	91.3
HS20	12.45	4.23	11.21	4.77	HS 84.52	152.1
2F1	23.73	7.14	21.36	8.06	0.00	107.2
3F1	23.80	4.97	21.42	5.60	0.00	114.2
4F1	22.30	4.59	20.07	5.17	0.00	123.8
5C1	11.36	5.33	10.23	6.01	0.00	213.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.8	64.9
OPER	151.3	-124.6	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.11	-2.29	23.17	-3.21	23.76	-2.47	18.28
OPER	HS20	-2.98	30.11	-2.29	23.17	-3.21	23.76	-2.47	18.28
OPER	2F1	-2.03	17.48	-1.56	13.45	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	24.26	-2.24	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	25.16	-2.42	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.16	22.91	-2.43	17.62	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.27	2.15	HS 43.08	77.5
HS20	38.78	3.59	HS 71.80	129.2
2F1	61.54	6.18	0.00	92.8
3F1	42.78	4.46	0.00	102.5
4F1	39.64	4.30	0.00	116.0
5C1	39.40	4.72	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 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	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50	
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50
OPER	HS20	16.20 R	12.46	180.50	0.0	25.70	19.77	152.50	
		-58.98 R	-45.37	159.00	0.0	-54.03	-41.56	140.00	162.50
OPER	2F1	13.49 R	10.37	162.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	105.00	0.0	0.00	0.00	0.00	
		-50.18 L	-38.60	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	101.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.16 L	21.66	105.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.98	2.64	6.98	2.64	HS 52.90	95.2
HS20	11.63	4.41	11.63	4.41	HS 88.16	158.7
2F1	22.16	7.45	22.16	7.45	0.00	111.8
3F1	22.22	5.18	22.22	5.18	0.00	119.2
4F1	20.82	4.78	20.82	4.78	0.00	129.1

5C1	10.61	5.56	10.61	5.56	0.00	222.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00			
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00		
OPER	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00			
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00		
OPER	2F1	38.39 R	29.53	165.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.82 R	36.02	169.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.13 R	33.18	169.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.40 L	41.85	108.00	0.0	0.00	0.00	0.00			
		-40.27 L	-30.97	128.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.52	98.1
HS20	5.08	5.84	4.54	6.54	HS 90.86	163.5
2F1	7.87	8.97	7.03	10.04	0.00	105.5
3F1	6.45	6.23	5.77	6.98	0.00	132.6
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	2F1	-2.03	15.25	-1.56	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.91	20.76	-2.24	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	21.31	-2.42	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.75	19.70	-3.66	15.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.06	93.7
HS20	27.49	4.34	HS 86.76	156.2
2F1	60.52	7.22	0.00	108.4
3F1	42.06	5.31	0.00	122.1
4F1	38.98	5.17	0.00	139.6
5C1	25.79	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.200 2F1
 3F1
 4F1
 5C1

Dead Load 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 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	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00	
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00
OPER	HS20	59.43 R	45.72	183.00	0.0	44.76	34.43	155.00	
		-45.75 L	-35.19	117.00	0.0	-35.40	-27.23	140.00	90.00
OPER	2F1	38.39 R	29.53	165.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	169.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	169.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	108.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.69	102.0
HS20	4.72	6.08	4.72	6.08	HS 94.48	170.1
2F1	7.31	9.32	7.31	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.99	6.51	5.99	0.00	161.6

5C1	5.16	6.91	5.16	6.91	0.00	206.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.7

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	173.4	-168.1	154.3	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.1	-280.2	257.1	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50			
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00		
OPER	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50			
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00		
OPER	2F1	56.49 R	43.46	167.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 R	55.22	171.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 R	56.72	171.50	0.0	0.00	0.00	0.00			
		-38.57 L	-29.67	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.40 L	55.69	110.50	0.0	0.00	0.00	0.00			
		-36.35 L	-27.96	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.43	1.78	4.93	HS 35.68	64.2
HS20	3.34	7.38	2.97	8.22	HS 59.46	107.0
2F1	5.12	11.32	4.55	12.61	0.00	68.3
3F1	4.03	7.87	3.58	8.77	0.00	82.4
4F1	3.92	7.27	3.49	8.10	0.00	94.1
5C1	3.99	7.71	3.55	8.59	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.5	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.00	-5.18	13.85
OPER	HS20	-4.41	20.57	-3.40	15.82	-6.73	18.00	-5.18	13.85
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.14	17.50	-2.42	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.61	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.27	HS 65.49	117.9
HS20	17.90	5.46	HS 109.15	196.5
2F1	33.40	8.73	0.00	130.9
3F1	30.68	6.56	0.00	150.8
4F1	38.33	6.41	0.00	173.1
5C1	18.22	6.80	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50	
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00
OPER	HS20	86.48 R	66.52	185.50	0.0	65.18	50.14	157.50	
		-37.98 L	-29.21	117.00	0.0	-29.97	-23.05	140.00	0.00
OPER	2F1	56.49 R	43.46	167.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 R	55.22	171.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 R	56.72	171.50	0.0	0.00	0.00	0.00	
		-38.57 L	-29.67	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.40 L	55.69	110.50	0.0	0.00	0.00	0.00	
		-36.35 L	-27.96	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.17	66.9
HS20	3.10	7.66	3.10	7.66	HS 61.94	111.5
2F1	4.74	11.76	4.74	11.76	0.00	71.1
3F1	3.73	8.17	3.73	8.17	0.00	85.8
4F1	3.63	7.54	3.63	7.54	0.00	98.1

5C1	3.70	8.01	3.70	8.01	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		27.68		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00			
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00		0.00	
OPER	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00			
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00		0.00	
OPER	2F1	66.33 R	51.02	170.00	0.0	0.00	0.00	0.00			
		-19.69 L	-15.14	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	84.91 R	65.32	170.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.79	130.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	91.09 R	70.07	174.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.60	127.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	83.98 R	64.60	172.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.04	130.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.74	5.72	1.54	6.36	HS 30.85	55.5
HS20	2.90	9.53	2.57	10.59	HS 51.41	92.5
2F1	4.24	14.63	3.76	16.25	0.00	56.4
3F1	3.31	10.17	2.94	11.30	0.00	67.5
4F1	3.09	9.39	2.74	10.43	0.00	73.9
5C1	3.35	8.51	2.97	9.45	0.00	118.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-8.97	16.78	-6.90	12.91	-9.31	15.01	-7.16	11.55
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.01	-7.16	11.55
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.49	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.75	147.2
HS20	12.73	6.81	HS 136.26	245.3
2F1	20.84	10.99	0.00	164.9
3F1	17.45	8.48	0.00	194.9
4F1	20.40	8.48	0.00	229.1
5C1	13.60	8.50	0.00	339.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00	
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00
OPER	HS20	97.01 R	74.62	188.00	0.0	77.41	59.55	160.00	
		-30.21 L	-23.24	117.00	0.0	-26.38	-20.29	140.00	0.00
OPER	2F1	66.33 R	51.02	170.00	0.0	0.00	0.00	0.00	
		-19.69 L	-15.14	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 R	65.32	170.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.79	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 R	70.07	174.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.60	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 R	64.60	172.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.93	1.61	5.93	HS 32.18	57.9
HS20	2.68	9.89	2.68	9.89	HS 53.63	96.5
2F1	3.92	15.17	3.92	15.17	0.00	58.8
3F1	3.06	10.55	3.06	10.55	0.00	70.5
4F1	2.86	9.74	2.86	9.74	0.00	77.1

5C1	3.10	8.82	3.10	8.82	0.00	123.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.454

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 20.3

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	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50			
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00		
OPER	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50			
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00		
OPER	2F1	67.42 L	51.86	152.50	0.0	0.00	0.00	0.00			
		-14.62 L	-11.25	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.16 R	69.35	172.50	0.0	0.00	0.00	0.00			
		-21.03 L	-16.18	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	94.17 R	72.44	176.50	0.0	0.00	0.00	0.00			
		-22.78 L	-17.52	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	86.00 L	66.15	111.50	0.0	0.00	0.00	0.00			
		-32.76 L	-25.20	131.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.77	7.65	1.56	8.49	HS 31.28	56.3
HS20	2.94	12.74	2.61	14.15	HS 52.13	93.8
2F1	4.14	19.87	3.66	22.06	0.00	54.9
3F1	3.09	13.81	2.74	15.33	0.00	63.0
4F1	2.96	12.75	2.62	14.16	0.00	70.8
5C1	3.24	8.87	2.87	9.84	0.00	114.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.500	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.08	-9.31	9.29
OPER	HS20	-13.12	13.12	-10.10	10.10	-12.10	12.08	-9.31	9.29
OPER	2F1	-7.98	7.98	-6.14	6.14	0.00	0.00	0.00	0.00
OPER	3F1	-10.00	10.00	-7.70	7.70	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.98	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.40	191.5
HS20	8.87	8.87	HS 177.33	319.2
2F1	14.59	14.59	0.00	218.8
3F1	11.63	11.63	0.00	267.5
4F1	12.46	12.46	0.00	336.4
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.6
 Superimposed Dead Load Moment 20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.8	176.4	-158.9	176.4	-158.9	154.5	-180.8	154.5	-
OPER 301.3	279.4	-279.4	279.4	-279.4	257.5	-301.3	257.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50	
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00
OPER	HS20	94.68 L	72.83	148.50	0.0	82.22	63.25	162.50	
		-22.43 L	-17.26	117.00	0.0	-22.80	-17.54	140.00	0.00
OPER	2F1	67.42 L	51.86	152.50	0.0	0.00	0.00	0.00	
		-14.62 L	-11.25	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.16 R	69.35	172.50	0.0	0.00	0.00	0.00	
		-21.03 L	-16.18	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.17 R	72.44	176.50	0.0	0.00	0.00	0.00	
		-22.78 L	-17.52	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.00 L	66.15	111.50	0.0	0.00	0.00	0.00	
		-32.76 L	-25.20	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.63	7.93	1.63	7.93	HS 32.64	58.8
HS20	2.72	13.22	2.72	13.22	HS 54.40	97.9
2F1	3.82	20.60	3.82	20.60	0.00	57.3
3F1	2.86	14.32	2.86	14.32	0.00	65.7
4F1	2.73	13.22	2.73	13.22	0.00	73.8

5C1	2.99	9.19	2.99	9.19	0.00	119.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 17.7

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	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00			
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00		
OPER	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00			
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00		
OPER	2F1	66.33 L	51.02	155.00	0.0	0.00	0.00	0.00			
		-19.68 R	-15.14	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.91 L	65.32	155.00	0.0	0.00	0.00	0.00			
		-28.31 R	-21.78	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.09 L	70.07	151.00	0.0	0.00	0.00	0.00			
		-30.66 R	-23.59	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.98 L	64.60	153.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.72	1.54	6.35	HS 30.87	55.6
HS20	2.90	9.53	2.57	10.59	HS 51.45	92.6
2F1	4.24	14.62	3.76	16.25	0.00	56.4
3F1	3.32	10.16	2.94	11.29	0.00	67.6
4F1	3.09	9.38	2.74	10.43	0.00	74.0
5C1	3.35	8.50	2.97	9.44	0.00	118.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	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	-16.78	8.97	-12.91	6.90	-15.04	9.28	-11.57	7.14
OPER	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.28	-11.57	7.14
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.37	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.47	5.81	-10.36	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.70	-10.35	6.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.66	HS 81.70	147.1
HS20	6.81	12.77	HS 136.16	245.1
2F1	10.98	20.86	0.00	164.7
3F1	8.47	17.46	0.00	194.8
4F1	8.48	20.41	0.00	228.9
5C1	8.49	13.61	0.00	339.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 17.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00	
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00
OPER	HS20	97.00 L	74.62	137.00	0.0	77.32	59.48	165.00	
		-30.20 R	-23.23	208.00	0.0	-26.40	-20.31	185.00	0.00
OPER	2F1	66.33 L	51.02	155.00	0.0	0.00	0.00	0.00	
		-19.68 R	-15.14	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.91 L	65.32	155.00	0.0	0.00	0.00	0.00	
		-28.31 R	-21.78	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.09 L	70.07	151.00	0.0	0.00	0.00	0.00	
		-30.66 R	-23.59	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.98 L	64.60	153.00	0.0	0.00	0.00	0.00	
		-33.85 R	-26.04	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.61	5.93	1.61	5.93	HS 32.20	58.0
HS20	2.68	9.88	2.68	9.88	HS 53.67	96.6
2F1	3.92	15.17	3.92	15.17	0.00	58.9
3F1	3.07	10.54	3.07	10.54	0.00	70.5
4F1	2.86	9.73	2.86	9.73	0.00	77.2

5C1	3.10	8.82	3.10	8.82	0.00	124.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.4

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	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50			
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00		
OPER	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50			
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00		
OPER	2F1	56.49 L	43.45	157.50	0.0	0.00	0.00	0.00			
		-24.74 R	-19.03	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.79 L	55.22	153.50	0.0	0.00	0.00	0.00			
		-35.60 R	-27.38	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.74 L	56.72	153.50	0.0	0.00	0.00	0.00			
		-38.55 R	-29.66	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.37 R	55.67	214.50	0.0	0.00	0.00	0.00			
		-36.33 R	-27.95	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.42	1.79	4.93	HS 35.73	64.3
HS20	3.35	7.37	2.98	8.21	HS 59.56	107.2
2F1	5.12	11.31	4.56	12.60	0.00	68.4
3F1	4.03	7.86	3.59	8.76	0.00	82.5
4F1	3.93	7.26	3.49	8.09	0.00	94.3
5C1	4.00	7.70	3.56	8.58	0.00	142.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.71	-13.86	5.16
OPER	HS20	-20.57	4.41	-15.82	3.40	-18.02	6.71	-13.86	5.16
OPER	2F1	-12.86	3.61	-9.89	2.78	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.50	3.15	-13.47	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.27	10.78	HS 65.44	117.8
HS20	5.45	17.97	HS 109.06	196.3
2F1	8.72	33.42	0.00	130.8
3F1	6.55	30.70	0.00	150.7
4F1	6.41	38.34	0.00	173.0
5C1	6.80	18.23	0.00	271.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50	
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00
OPER	HS20	86.47 L	66.52	139.50	0.0	65.00	50.00	167.50	
		-37.97 R	-29.21	208.00	0.0	-30.01	-23.08	185.00	0.00
OPER	2F1	56.49 L	43.45	157.50	0.0	0.00	0.00	0.00	
		-24.74 R	-19.03	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.79 L	55.22	153.50	0.0	0.00	0.00	0.00	
		-35.60 R	-27.38	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.74 L	56.72	153.50	0.0	0.00	0.00	0.00	
		-38.55 R	-29.66	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.37 R	55.67	214.50	0.0	0.00	0.00	0.00	
		-36.33 R	-27.95	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.59	1.86	4.59	HS 37.22	67.0
HS20	3.10	7.65	3.10	7.65	HS 62.04	111.7
2F1	4.75	11.74	4.75	11.74	0.00	71.2
3F1	3.74	8.16	3.74	8.16	0.00	85.9
4F1	3.64	7.54	3.64	7.54	0.00	98.2

5C1	3.71	8.00	3.71	8.00	0.00	148.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00			
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00		
OPER	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00			
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00		
OPER	2F1	38.38 L	29.53	160.00	0.0	0.00	0.00	0.00			
		-29.81 R	-22.93	192.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 L	36.01	156.00	0.0	0.00	0.00	0.00			
		-42.88 R	-32.99	195.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 L	33.17	156.00	0.0	0.00	0.00	0.00			
		-46.44 R	-35.73	198.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.36 R	41.82	217.00	0.0	0.00	0.00	0.00			
		-40.25 R	-30.96	197.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.06	3.50	2.73	3.92	HS 54.64	98.4
HS20	5.09	5.83	4.55	6.53	HS 91.07	163.9
2F1	7.88	8.95	7.05	10.02	0.00	105.8
3F1	6.46	6.22	5.78	6.97	0.00	132.9
4F1	7.02	5.74	6.28	6.43	0.00	155.0
5C1	5.57	6.63	4.98	7.42	0.00	199.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.44	-16.13	3.41
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.97	4.44	-16.13	3.41
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.76	2.91	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.70	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.59	HS 52.02	93.6
HS20	4.34	27.65	HS 86.69	156.1
2F1	7.22	60.53	0.00	108.3
3F1	5.30	42.08	0.00	122.0
4F1	5.17	38.99	0.00	139.5
5C1	5.59	25.80	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00	
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00
OPER	HS20	59.43 L	45.71	142.00	0.0	45.01	34.62	170.00	
		-45.74 R	-35.19	208.00	0.0	-35.64	-27.41	185.00	235.00
OPER	2F1	38.38 L	29.53	160.00	0.0	0.00	0.00	0.00	
		-29.81 R	-22.93	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 L	36.01	156.00	0.0	0.00	0.00	0.00	
		-42.88 R	-32.99	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 L	33.17	156.00	0.0	0.00	0.00	0.00	
		-46.44 R	-35.73	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.36 R	41.82	217.00	0.0	0.00	0.00	0.00	
		-40.25 R	-30.96	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.64	2.84	3.64	HS 56.81	102.3
HS20	4.73	6.07	4.73	6.07	HS 94.69	170.4
2F1	7.33	9.31	7.33	9.31	0.00	109.9
3F1	6.01	6.47	6.01	6.47	0.00	138.2
4F1	6.52	5.97	6.52	5.97	0.00	161.3

5C1	5.18	6.89	5.18	6.89	0.00	207.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 7.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50			
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50		
OPER	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50			
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50		
OPER	2F1	13.48 L	10.37	162.50	0.0	0.00	0.00	0.00			
		-34.87 R	-26.82	192.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	13.38 R	10.29	220.00	0.0	0.00	0.00	0.00			
		-50.17 R	-38.59	195.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	14.29 R	10.99	224.00	0.0	0.00	0.00	0.00			
		-54.33 R	-41.79	198.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	28.11 R	21.62	219.50	0.0	0.00	0.00	0.00			
		-46.75 R	-35.96	199.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	7.72	2.53	6.95	2.85	HS 50.56	91.0
HS20	12.86	4.21	11.58	4.76	HS 84.27	151.7
2F1	23.80	7.12	21.42	8.04	0.00	106.9
3F1	23.98	4.95	21.59	5.59	0.00	113.9
4F1	22.46	4.57	20.22	5.16	0.00	123.5
5C1	11.42	5.31	10.28	6.00	0.00	212.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.0	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.19	-18.29	2.46
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.78	3.19	-18.29	2.46
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.91	-18.66	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.44	HS 43.04	77.5
HS20	3.59	39.07	HS 71.74	129.1
2F1	6.18	61.55	0.00	92.7
3F1	4.45	42.79	0.00	102.4
4F1	4.29	39.51	0.00	115.9
5C1	4.72	39.42	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 7.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.6 -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50	
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50
OPER	HS20	16.19 L	12.46	144.50	0.0	24.95	19.19	172.50	
		-58.96 L	-45.35	166.00	0.0	-54.13	-41.64	185.00	162.50
OPER	2F1	13.48 L	10.37	162.50	0.0	0.00	0.00	0.00	
		-34.87 R	-26.82	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.38 R	10.29	220.00	0.0	0.00	0.00	0.00	
		-50.17 R	-38.59	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.29 R	10.99	224.00	0.0	0.00	0.00	0.00	
		-54.33 R	-41.79	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.11 R	21.62	219.50	0.0	0.00	0.00	0.00	
		-46.75 R	-35.96	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.21	2.64	7.21	2.64	HS 52.75	94.9
HS20	12.01	4.40	12.01	4.40	HS 87.92	158.2
2F1	22.22	7.43	22.22	7.43	0.00	111.5
3F1	22.39	5.17	22.39	5.17	0.00	118.8
4F1	20.97	4.77	20.97	4.77	0.00	128.8

5C1	10.66	5.54	10.66	5.54	0.00	221.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.825

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

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	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00			
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.01	2.61	HS 45.66	82.2
2F1	32.16	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.52	-23.17	26.56	-23.78	26.36	-18.29	20.28
OPER	HS20	-30.12	34.52	-23.17	26.56	-23.78	26.36	-18.29	20.28
OPER	2F1	-17.48	19.45	-13.45	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.47	-18.66	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.04	-19.35	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.45	5.44	0.00	81.6
3F1	3.86	3.85	0.00	88.6
4F1	3.65	3.64	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00			
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00		
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00			
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00			
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00			
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00			
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00	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	12.58	1.37	11.41	1.56	HS 27.39	49.3
HS20	20.96	2.28	19.01	2.61	HS 45.66	82.2
2F1	32.16	5.63	29.18	6.43	0.00	84.5
3F1	22.36	3.56	20.28	4.07	0.00	81.9
4F1	20.64	3.01	18.73	3.44	0.00	81.3
5C1	27.00	3.78	24.49	4.31	0.00	151.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.52	-26.56	26.56	-26.35	26.36	-20.27	20.28
OPER	HS20	-34.53	34.52	-26.56	26.56	-26.35	26.36	-20.27	20.28
OPER	2F1	-19.45	19.45	-14.96	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.47	-21.13	21.13	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.04	-22.34	22.34	0.00	0.00	0.00	0.00
OPER	5C1	-25.97	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.79	66.2
HS20	3.07	3.07	HS 61.32	110.4
2F1	5.45	5.44	0.00	81.6
3F1	3.86	3.85	0.00	88.6
4F1	3.65	3.64	0.00	98.4
5C1	4.08	4.08	0.00	163.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	HS20	16.43 L	12.63	117.00	0.0	16.32	12.55	140.00	
		-98.55 R	-75.80	195.50	0.0	-90.65	-69.73	165.00	185.00
OPER	2F1	10.71 L	8.23	132.50	0.0	0.00	0.00	0.00	
		-39.95 L	-30.73	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.40 L	11.85	130.00	0.0	0.00	0.00	0.00	
		-63.21 R	-48.62	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.68 L	12.83	127.00	0.0	0.00	0.00	0.00	
		-74.73 R	-57.48	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	12.75 L	9.81	90.50	0.0	0.00	0.00	0.00	
		-59.56 L	-45.82	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.80	1.43	11.80	1.43	HS 28.70	51.7
HS20	19.67	2.39	19.67	2.39	HS 47.84	86.1
2F1	30.18	5.90	30.18	5.90	0.00	88.5
3F1	20.98	3.73	20.98	3.73	0.00	85.8
4F1	19.37	3.15	19.37	3.15	0.00	85.2

5C1	25.33	3.96	25.33	3.96	0.00	158.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50			
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50		
OPER	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50			
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50		
OPER	2F1	13.49 R	10.38	187.50	0.0	0.00	0.00	0.00			
		-34.88 L	-26.83	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.45 L	10.34	130.00	0.0	0.00	0.00	0.00			
		-50.19 L	-38.60	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.36 L	11.04	126.00	0.0	0.00	0.00	0.00			
		-54.35 L	-41.81	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.17 L	21.67	130.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.98	150.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	7.54	2.53	6.79	2.86	HS 50.60	91.1
HS20	12.57	4.22	11.32	4.76	HS 84.33	151.8
2F1	23.76	7.13	21.39	8.05	0.00	106.9
3F1	23.84	4.95	21.46	5.59	0.00	114.0
4F1	22.33	4.57	20.10	5.16	0.00	123.5
5C1	11.38	5.32	10.25	6.00	0.00	212.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.9	64.8
OPER	151.3	-124.8	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.94	30.11	-2.26	23.16	-3.13	23.79	-2.41	18.30
OPER	HS20	-2.94	30.11	-2.26	23.16	-3.13	23.79	-2.41	18.30
OPER	2F1	-2.02	17.48	-1.55	13.44	0.00	0.00	0.00	0.00
OPER	3F1	-2.90	24.26	-2.23	18.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	25.15	-2.41	19.35	0.00	0.00	0.00	0.00
OPER	5C1	-3.15	22.91	-2.42	17.62	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.89	2.15	HS 43.01	77.4
HS20	39.82	3.58	HS 71.68	129.0
2F1	61.90	6.18	0.00	92.6
3F1	43.03	4.45	0.00	102.3
4F1	39.87	4.29	0.00	115.8
5C1	39.60	4.71	0.00	188.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50	
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50
OPER	HS20	16.21 R	12.47	205.50	0.0	25.50	19.62	177.50	
		-58.98 R	-45.37	184.00	0.0	-54.13	-41.64	165.00	187.50
OPER	2F1	13.49 R	10.38	187.50	0.0	0.00	0.00	0.00	
		-34.88 L	-26.83	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.45 L	10.34	130.00	0.0	0.00	0.00	0.00	
		-50.19 L	-38.60	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.36 L	11.04	126.00	0.0	0.00	0.00	0.00	
		-54.35 L	-41.81	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.17 L	21.67	130.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.98	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.04	2.64	7.04	2.64	HS 52.78	95.0
HS20	11.74	4.40	11.74	4.40	HS 87.97	158.4
2F1	22.19	7.44	22.19	7.44	0.00	111.6
3F1	22.26	5.17	22.26	5.17	0.00	118.9
4F1	20.85	4.77	20.85	4.77	0.00	128.9

5C1	10.63	5.55	10.63	5.55	0.00	221.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00			
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00		
OPER	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00			
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00		
OPER	2F1	38.39 R	29.53	190.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	46.82 R	36.02	194.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	43.13 R	33.18	194.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	152.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	54.40 L	41.85	133.00	0.0	0.00	0.00	0.00			
		-40.27 L	-30.97	153.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.73	3.92	HS 54.53	98.2
HS20	5.08	5.84	4.54	6.54	HS 90.88	163.6
2F1	7.87	8.96	7.03	10.03	0.00	105.5
3F1	6.45	6.23	5.77	6.97	0.00	132.7
4F1	7.00	5.75	6.26	6.44	0.00	155.3
5C1	5.55	6.64	4.96	7.43	0.00	198.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

8.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.5

0.0

5.9

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)

INV. 90.8 -73.7 66.0

OPER 151.3 -122.8 110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.94	25.39	-2.26	19.53	-4.39	20.98	-3.38	16.14
OPER	HS20	-2.94	25.39	-2.26	19.53	-4.39	20.98	-3.38	16.14
OPER	2F1	-2.02	15.25	-1.55	11.73	0.00	0.00	0.00	0.00
OPER	3F1	-2.90	20.76	-2.23	15.97	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	21.31	-2.41	16.39	0.00	0.00	0.00	0.00
OPER	5C1	-4.74	19.70	-3.65	15.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.78	2.60	HS 51.98	93.6
HS20	27.97	4.33	HS 86.63	155.9
2F1	60.88	7.21	0.00	108.2
3F1	42.31	5.30	0.00	121.9
4F1	39.21	5.16	0.00	139.4
5C1	25.90	5.58	0.00	223.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00	
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00
OPER	HS20	59.43 R	45.72	208.00	0.0	44.74	34.41	180.00	
		-45.75 L	-35.19	142.00	0.0	-35.41	-27.24	165.00	115.00
OPER	2F1	38.39 R	29.53	190.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.82 R	36.02	194.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.13 R	33.18	194.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.40 L	41.85	133.00	0.0	0.00	0.00	0.00	
		-40.27 L	-30.97	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.84	3.65	2.84	3.65	HS 56.70	102.1
HS20	4.72	6.08	4.72	6.08	HS 94.50	170.1
2F1	7.32	9.32	7.32	9.32	0.00	109.7
3F1	6.00	6.48	6.00	6.48	0.00	137.9
4F1	6.51	5.98	6.51	5.98	0.00	161.6

5C1	5.16	6.90	5.16	6.90	0.00	206.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50			
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00		
OPER	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50			
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00		
OPER	2F1	56.49 R	43.45	192.50	0.0	0.00	0.00	0.00			
		-24.75 L	-19.04	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.78 R	55.22	196.50	0.0	0.00	0.00	0.00			
		-35.61 L	-27.39	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.73 R	56.72	196.50	0.0	0.00	0.00	0.00			
		-38.56 L	-29.66	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.39 L	55.68	135.50	0.0	0.00	0.00	0.00			
		-36.34 L	-27.95	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.00	4.43	1.78	4.94	HS 35.62	64.1
HS20	3.34	7.39	2.97	8.23	HS 59.37	106.9
2F1	5.11	11.34	4.54	12.63	0.00	68.2
3F1	4.02	7.88	3.58	8.78	0.00	82.2
4F1	3.91	7.28	3.48	8.11	0.00	94.0
5C1	3.99	7.72	3.55	8.60	0.00	141.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.56	-3.40	15.82	-6.66	18.03	-5.13	13.87
OPER	HS20	-4.42	20.56	-3.40	15.82	-6.66	18.03	-5.13	13.87
OPER	2F1	-3.61	12.86	-2.78	9.89	0.00	0.00	0.00	0.00
OPER	3F1	-3.93	17.12	-3.02	13.17	0.00	0.00	0.00	0.00
OPER	4F1	-3.13	17.50	-2.41	13.46	0.00	0.00	0.00	0.00
OPER	5C1	-6.60	16.50	-5.07	12.69	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.27	HS 65.39	117.7
HS20	18.11	5.45	HS 108.98	196.2
2F1	33.44	8.72	0.00	130.7
3F1	30.72	6.55	0.00	150.6
4F1	38.55	6.40	0.00	172.9
5C1	18.30	6.79	0.00	271.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50	
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00
OPER	HS20	86.47 R	66.52	210.50	0.0	65.25	50.19	182.50	
		-37.98 L	-29.21	142.00	0.0	-29.81	-22.93	165.00	0.00
OPER	2F1	56.49 R	43.45	192.50	0.0	0.00	0.00	0.00	
		-24.75 L	-19.04	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.78 R	55.22	196.50	0.0	0.00	0.00	0.00	
		-35.61 L	-27.39	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.73 R	56.72	196.50	0.0	0.00	0.00	0.00	
		-38.56 L	-29.66	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.39 L	55.68	135.50	0.0	0.00	0.00	0.00	
		-36.34 L	-27.95	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.60	1.86	4.60	HS 37.11	66.8
HS20	3.09	7.67	3.09	7.67	HS 61.85	111.3
2F1	4.74	11.77	4.74	11.77	0.00	71.0
3F1	3.73	8.18	3.73	8.18	0.00	85.7
4F1	3.63	7.55	3.63	7.55	0.00	97.9

5C1	3.69	8.02	3.69	8.02	0.00	147.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			94.740

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		29.10		104.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.5 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00			
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00		
OPER	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00			
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00		
OPER	2F1	66.32 R	51.01	195.00	0.0	0.00	0.00	0.00			
		-19.68 L	-15.14	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.90 R	65.30	195.00	0.0	0.00	0.00	0.00			
		-28.32 L	-21.78	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.07 R	70.06	199.00	0.0	0.00	0.00	0.00			
		-30.67 L	-23.59	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	83.97 R	64.59	197.00	0.0	0.00	0.00	0.00			
		-33.83 L	-26.02	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.74	5.74	1.54	6.37	HS	30.74
HS20	2.89	9.56	2.56	10.62	HS	51.23
2F1	4.23	14.67	3.75	16.30		0.00
3F1	3.30	10.20	2.93	11.33		0.00
4F1	3.08	9.42	2.73	10.46		0.00
5C1	3.34	8.54	2.96	9.48		0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	2.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.57
OPER	HS20	-8.97	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.57
OPER	2F1	-5.68	10.40	-4.37	8.00	0.00	0.00	0.00	0.00
OPER	3F1	-6.79	13.48	-5.22	10.37	0.00	0.00	0.00	0.00
OPER	4F1	-5.81	13.47	-4.47	10.36	0.00	0.00	0.00	0.00
OPER	5C1	-8.68	13.45	-6.68	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.70	4.08	HS 81.63	146.9
HS20	12.84	6.80	HS 136.05	244.9
2F1	20.87	10.98	0.00	164.6
3F1	17.47	8.46	0.00	194.7
4F1	20.42	8.47	0.00	228.8
5C1	13.67	8.48	0.00	339.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.5 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.5	-179.7	155.5	-
OPER 299.6	279.4	-279.4	279.4	-279.4	259.2	-299.6	259.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00	
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00
OPER	HS20	97.01 R	74.62	213.00	0.0	77.56	59.66	185.00	
		-30.20 L	-23.23	142.00	0.0	-26.05	-20.04	165.00	0.00
OPER	2F1	66.32 R	51.01	195.00	0.0	0.00	0.00	0.00	
		-19.68 L	-15.14	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.90 R	65.30	195.00	0.0	0.00	0.00	0.00	
		-28.32 L	-21.78	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.07 R	70.06	199.00	0.0	0.00	0.00	0.00	
		-30.67 L	-23.59	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.97 R	64.59	197.00	0.0	0.00	0.00	0.00	
		-33.83 L	-26.02	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.60	5.95	1.60	5.95	HS 32.07	57.7
HS20	2.67	9.92	2.67	9.92	HS 53.45	96.2
2F1	3.91	15.22	3.91	15.22	0.00	58.6
3F1	3.05	10.58	3.05	10.58	0.00	70.2
4F1	2.85	9.77	2.85	9.77	0.00	76.9

5C1	3.09	8.85	3.09	8.85	0.00	123.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.7 21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.67	L	72.82	173.50	0.0	82.45	63.42	187.50		
		-22.43	L	-17.25	142.00	0.0	-22.28	-17.14	165.00	0.00	
OPER	HS20	94.67	L	72.82	173.50	0.0	82.45	63.42	187.50		
		-22.43	L	-17.25	142.00	0.0	-22.28	-17.14	165.00	0.00	
OPER	2F1	67.40	L	51.85	177.50	0.0	0.00	0.00	0.00		
		-14.62	L	-11.24	157.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	90.13	R	69.33	197.50	0.0	0.00	0.00	0.00		
		-21.03	L	-16.17	155.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	94.15	R	72.42	201.50	0.0	0.00	0.00	0.00		
		-22.77	L	-17.52	152.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	86.30	R	66.39	238.50	0.0	0.00	0.00	0.00		
		-32.71	L	-25.16	156.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.76	7.81	1.56	8.66	HS 31.11	56.0
HS20	2.93	13.01	2.59	14.44	HS 51.85	93.3
2F1	4.12	19.97	3.64	22.16	0.00	54.6
3F1	3.08	13.88	2.72	15.40	0.00	62.6
4F1	2.95	12.82	2.61	14.22	0.00	70.4
5C1	3.21	8.92	2.84	9.90	0.00	113.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.500	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.12	13.12	-10.09	10.09	-12.03	12.11	-9.26	9.32
OPER	HS20	-13.12	13.12	-10.09	10.09	-12.03	12.11	-9.26	9.32
OPER	2F1	-7.98	7.97	-6.14	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-10.01	10.00	-7.70	7.69	0.00	0.00	0.00	0.00
OPER	4F1	-9.34	9.34	-7.19	7.18	0.00	0.00	0.00	0.00
OPER	5C1	-10.95	10.98	-8.42	8.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.33	5.31	HS 106.26	191.3
HS20	8.88	8.85	HS 177.10	318.8
2F1	14.61	14.57	0.00	218.6
3F1	11.65	11.62	0.00	267.2
4F1	12.47	12.45	0.00	336.0
5C1	10.64	10.58	0.00	423.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50	
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00	0.00
OPER	HS20	94.67 L	72.82	173.50	0.0	82.45	63.42	187.50	
		-22.43 L	-17.25	142.00	0.0	-22.28	-17.14	165.00	0.00
OPER	2F1	67.40 L	51.85	177.50	0.0	0.00	0.00	0.00	
		-14.62 L	-11.24	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.13 R	69.33	197.50	0.0	0.00	0.00	0.00	
		-21.03 L	-16.17	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	94.15 R	72.42	201.50	0.0	0.00	0.00	0.00	
		-22.77 L	-17.52	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	86.30 R	66.39	238.50	0.0	0.00	0.00	0.00	
		-32.71 L	-25.16	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.62	8.10	1.62	8.10	HS 32.47	58.5
HS20	2.71	13.49	2.71	13.49	HS 54.12	97.4
2F1	3.80	20.70	3.80	20.70	0.00	57.0
3F1	2.84	14.39	2.84	14.39	0.00	65.4
4F1	2.72	13.29	2.72	13.29	0.00	73.5

5C1	2.97	9.25	2.97	9.25	0.00	118.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 19.3

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	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00			
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00		
OPER	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00			
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00		
OPER	2F1	66.30 L	51.00	180.00	0.0	0.00	0.00	0.00			
		-19.59 R	-15.07	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.87 L	65.29	180.00	0.0	0.00	0.00	0.00			
		-28.19 R	-21.68	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	91.05 L	70.04	176.00	0.0	0.00	0.00	0.00			
		-30.53 R	-23.49	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	84.00 L	64.62	178.00	0.0	0.00	0.00	0.00			
		-33.75 R	-25.96	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.73	5.81	1.53	6.45	HS 30.66	55.2
HS20	2.88	9.68	2.56	10.75	HS 51.10	92.0
2F1	4.22	14.78	3.74	16.41	0.00	56.0
3F1	3.30	10.27	2.92	11.41	0.00	67.1
4F1	3.07	9.48	2.72	10.53	0.00	73.5
5C1	3.33	8.58	2.95	9.53	0.00	118.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.90	6.90	-14.97	9.31	-11.51	7.16
OPER	HS20	-16.78	8.97	-12.90	6.90	-14.97	9.31	-11.51	7.16
OPER	2F1	-10.40	5.68	-8.00	4.37	0.00	0.00	0.00	0.00
OPER	3F1	-13.49	6.79	-10.38	5.22	0.00	0.00	0.00	0.00
OPER	4F1	-13.48	5.81	-10.37	4.47	0.00	0.00	0.00	0.00
OPER	5C1	-13.45	8.70	-10.35	6.69	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.09	7.62	HS 81.85	147.3
HS20	6.82	12.70	HS 136.42	245.5
2F1	11.00	20.83	0.00	165.0
3F1	8.48	17.44	0.00	195.1
4F1	8.49	20.38	0.00	229.2
5C1	8.51	13.60	0.00	340.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.2	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
OPER 300.3	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00	
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00
OPER	HS20	96.97 L	74.59	162.00	0.0	77.63	59.72	190.00	
		-29.91 R	-23.01	233.00	0.0	-25.66	-19.74	210.00	0.00
OPER	2F1	66.30 L	51.00	180.00	0.0	0.00	0.00	0.00	
		-19.59 R	-15.07	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.87 L	65.29	180.00	0.0	0.00	0.00	0.00	
		-28.19 R	-21.68	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	91.05 L	70.04	176.00	0.0	0.00	0.00	0.00	
		-30.53 R	-23.49	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	84.00 L	64.62	178.00	0.0	0.00	0.00	0.00	
		-33.75 R	-25.96	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.60	6.02	1.60	6.02	HS 31.99	57.6
HS20	2.67	10.04	2.67	10.04	HS 53.31	96.0
2F1	3.90	15.33	3.90	15.33	0.00	58.5
3F1	3.05	10.65	3.05	10.65	0.00	70.0
4F1	2.84	9.84	2.84	9.84	0.00	76.7

5C1	3.08	8.90	3.08	8.90	0.00	123.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.0 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50			
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00		
OPER	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50			
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00		
OPER	2F1	56.46 L	43.43	182.50	0.0	0.00	0.00	0.00			
		-24.64 R	-18.95	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.74 L	55.18	178.50	0.0	0.00	0.00	0.00			
		-35.44 R	-27.26	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.68 L	56.68	178.50	0.0	0.00	0.00	0.00			
		-38.39 R	-29.53	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.92 R	56.09	239.50	0.0	0.00	0.00	0.00			
		-36.19 R	-27.84	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.99	4.50	1.77	5.01	HS 35.43	63.8
HS20	3.32	7.50	2.95	8.35	HS 59.06	106.3
2F1	5.09	11.45	4.52	12.75	0.00	67.8
3F1	4.00	7.96	3.56	8.86	0.00	81.8
4F1	3.90	7.35	3.46	8.18	0.00	93.5
5C1	3.94	7.79	3.50	8.68	0.00	140.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.4	72.2
OPER	151.3	-112.4	120.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.74	-13.81	5.19
OPER	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.74	-13.81	5.19
OPER	2F1	-12.86	3.61	-9.89	2.77	0.00	0.00	0.00	0.00
OPER	3F1	-17.12	3.93	-13.17	3.02	0.00	0.00	0.00	0.00
OPER	4F1	-17.51	3.15	-13.47	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-16.50	6.61	-12.69	5.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.28	10.71	HS 65.54	118.0
HS20	5.46	17.85	HS 109.23	196.6
2F1	8.73	33.38	0.00	131.0
3F1	6.56	30.66	0.00	150.9
4F1	6.42	38.26	0.00	173.3
5C1	6.81	18.21	0.00	272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.0 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50	
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00
OPER	HS20	86.43 L	66.48	164.50	0.0	65.39	50.30	192.50	
		-37.61 R	-28.93	233.00	0.0	-29.08	-22.37	210.00	0.00
OPER	2F1	56.46 L	43.43	182.50	0.0	0.00	0.00	0.00	
		-24.64 R	-18.95	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.74 L	55.18	178.50	0.0	0.00	0.00	0.00	
		-35.44 R	-27.26	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.68 L	56.68	178.50	0.0	0.00	0.00	0.00	
		-38.39 R	-29.53	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.92 R	56.09	239.50	0.0	0.00	0.00	0.00	
		-36.19 R	-27.84	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.85	4.67	1.85	4.67	HS 36.93	66.5
HS20	3.08	7.79	3.08	7.79	HS 61.54	110.8
2F1	4.71	11.89	4.71	11.89	0.00	70.7
3F1	3.71	8.26	3.71	8.26	0.00	85.3
4F1	3.61	7.63	3.61	7.63	0.00	97.5

5C1	3.65	8.09	3.65	8.09	0.00	145.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.800

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.7

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	179.9	-161.7	160.7	-180.9
OPER	300.6C	-268.7	268.7	-300.6C	299.8	-269.5	267.8	-301.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00			
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00			177.50
OPER	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00			
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00			177.50
OPER	2F1	38.35 L	29.50	185.00	0.0	0.00	0.00	0.00			
		-29.68 R	-22.83	217.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	46.76 L	35.97	181.00	0.0	0.00	0.00	0.00			
		-42.69 R	-32.84	220.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	43.07 L	33.13	181.00	0.0	0.00	0.00	0.00			
		-46.24 R	-35.57	223.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	55.19 R	42.45	242.00	0.0	0.00	0.00	0.00			
		-40.08 R	-30.83	222.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.03	3.57	2.71	3.99	HS 54.14	97.5
HS20	5.05	5.95	4.51	6.65	HS 90.24	162.4
2F1	7.82	9.08	6.99	10.16	0.00	104.8
3F1	6.41	6.31	5.73	7.06	0.00	131.7
4F1	6.96	5.83	6.22	6.52	0.00	157.3
5C1	5.43	6.72	4.85	7.52	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.800		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	73.5
OPER	151.3	-110.3	122.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.91	4.47	-16.08	3.44
OPER	HS20	-25.40	2.98	-19.54	2.29	-20.91	4.47	-16.08	3.44
OPER	2F1	-15.25	2.03	-11.73	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-20.77	2.92	-15.97	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-21.31	3.15	-16.39	2.42	0.00	0.00	0.00	0.00
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.61	16.44	HS 52.10	93.8
HS20	4.34	27.40	HS 86.84	156.3
2F1	7.23	60.42	0.00	108.5
3F1	5.31	42.00	0.00	122.1
4F1	5.18	38.92	0.00	139.7
5C1	5.60	25.77	0.00	224.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.2	-168.1	167.2	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00	
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50
OPER	HS20	59.36 L	45.67	167.00	0.0	45.49	34.99	195.00	
		-45.31 R	-34.85	233.00	0.0	-33.05	-25.42	210.00	177.50
OPER	2F1	38.35 L	29.50	185.00	0.0	0.00	0.00	0.00	
		-29.68 R	-22.83	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.76 L	35.97	181.00	0.0	0.00	0.00	0.00	
		-42.69 R	-32.84	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.07 L	33.13	181.00	0.0	0.00	0.00	0.00	
		-46.24 R	-35.57	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	55.19 R	42.45	242.00	0.0	0.00	0.00	0.00	
		-40.08 R	-30.83	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.82	3.71	2.82	3.71	HS 56.31	101.4
HS20	4.69	6.18	4.69	6.18	HS 93.86	168.9
2F1	7.26	9.44	7.26	9.44	0.00	109.0
3F1	5.96	6.56	5.96	6.56	0.00	137.0
4F1	6.47	6.06	6.47	6.06	0.00	163.6

5C1	5.05	6.99	5.05	6.99	0.00	201.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 8.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50			
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50		
OPER	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50			
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50		
OPER	2F1	13.45 L	10.34	187.50	0.0	0.00	0.00	0.00			
		-34.72 R	-26.71	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	15.11 R	11.62	245.00	0.0	0.00	0.00	0.00			
		-49.95 R	-38.42	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	16.17 R	12.44	249.00	0.0	0.00	0.00	0.00			
		-54.10 R	-41.61	223.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.33 R	22.56	244.50	0.0	0.00	0.00	0.00			
		-46.56 R	-35.81	224.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.46	2.57	6.71	2.90	HS 51.46	92.6
HS20	12.44	4.29	11.19	4.83	HS 85.76	154.4
2F1	23.62	7.25	21.24	8.17	0.00	108.7
3F1	21.02	5.04	18.91	5.68	0.00	115.9
4F1	19.65	4.65	17.67	5.24	0.00	125.6
5C1	10.83	5.41	9.74	6.09	0.00	216.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	8.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.7
OPER	151.3	-108.2	124.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.71	3.23	-18.24	2.48
OPER	HS20	-30.12	3.11	-23.17	2.39	-23.71	3.23	-18.24	2.48
OPER	2F1	-17.48	2.03	-13.45	1.56	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	2.92	-18.67	2.24	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	3.16	-19.35	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	3.17	-17.60	2.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.16	23.15	HS 43.12	77.6
HS20	3.59	38.58	HS 71.86	129.4
2F1	6.19	61.44	0.00	92.9
3F1	4.46	42.71	0.00	102.6
4F1	4.30	39.43	0.00	116.1
5C1	4.73	39.35	0.00	189.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 8.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50	
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50
OPER	HS20	16.13 L	12.41	169.50	0.0	25.54	19.64	197.50	
		-58.69 L	-45.15	191.00	0.0	-52.86	-40.66	210.00	187.50
OPER	2F1	13.45 L	10.34	187.50	0.0	0.00	0.00	0.00	
		-34.72 R	-26.71	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.11 R	11.62	245.00	0.0	0.00	0.00	0.00	
		-49.95 R	-38.42	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.17 R	12.44	249.00	0.0	0.00	0.00	0.00	
		-54.10 R	-41.61	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.33 R	22.56	244.50	0.0	0.00	0.00	0.00	
		-46.56 R	-35.81	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.96	2.68	6.96	2.68	HS 53.65	96.6
HS20	11.61	4.47	11.61	4.47	HS 89.42	161.0
2F1	22.04	7.56	22.04	7.56	0.00	113.4
3F1	19.62	5.25	19.62	5.25	0.00	120.8
4F1	18.33	4.85	18.33	4.85	0.00	131.0

5C1	10.10	5.64	10.10	5.64	0.00	225.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00			
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00			
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00			
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00			
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.48	-23.17	26.52	-23.71	26.11	-18.24	20.08
OPER	HS20	-30.12	34.48	-23.17	26.52	-23.71	26.11	-18.24	20.08
OPER	2F1	-17.48	19.43	-13.45	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-24.26	27.44	-18.67	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-25.16	29.01	-19.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-22.88	25.93	-17.60	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.07	3.09	HS 61.49	110.7
2F1	5.46	5.48	0.00	81.9
3F1	3.86	3.88	0.00	88.9
4F1	3.65	3.67	0.00	98.7
5C1	4.10	4.11	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00	
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00	
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00	
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.036

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00			
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00		
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00			
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00			
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00			
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00			
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.23	1.39	9.27	1.59	HS 27.88	50.2
HS20	17.05	2.32	15.44	2.65	HS 46.47	83.6
2F1	28.32	5.72	25.66	6.52	0.00	85.7
3F1	19.69	3.62	17.84	4.12	0.00	83.2
4F1	18.21	3.06	16.50	3.49	0.00	82.6
5C1	22.13	3.85	20.05	4.39	0.00	153.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-9.5	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.48	-26.56	26.52	-26.28	26.11	-20.22	20.08
OPER	HS20	-34.53	34.48	-26.56	26.52	-26.28	26.11	-20.22	20.08
OPER	2F1	-19.45	19.43	-14.96	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-27.47	27.44	-21.13	21.11	0.00	0.00	0.00	0.00
OPER	4F1	-29.05	29.01	-22.35	22.31	0.00	0.00	0.00	0.00
OPER	5C1	-25.91	25.93	-19.93	19.95	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.85	HS 36.89	66.4
HS20	3.07	3.09	HS 61.49	110.7
2F1	5.46	5.48	0.00	81.9
3F1	3.86	3.88	0.00	88.9
4F1	3.65	3.67	0.00	98.7
5C1	4.10	4.11	0.00	163.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	HS20	19.98 R	15.37	258.00	0.0	17.84	13.72	235.00	
		-98.43 R	-75.72	220.50	0.0	-89.21	-68.63	190.00	210.00
OPER	2F1	12.03 R	9.25	242.50	0.0	0.00	0.00	0.00	
		-40.01 L	-30.77	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.30 R	13.31	245.00	0.0	0.00	0.00	0.00	
		-63.24 R	-48.65	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.70 R	14.39	248.00	0.0	0.00	0.00	0.00	
		-74.77 R	-57.52	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	15.39 R	11.84	284.50	0.0	0.00	0.00	0.00	
		-59.44 R	-45.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.59	1.46	9.59	1.46	HS 29.19	52.5
HS20	15.98	2.43	15.98	2.43	HS 48.65	87.6
2F1	26.55	5.99	26.55	5.99	0.00	89.8
3F1	18.46	3.79	18.46	3.79	0.00	87.1
4F1	17.07	3.20	17.07	3.20	0.00	86.5

5C1	20.75	4.03	20.75	4.03	0.00	161.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50			
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50		
OPER	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50			
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50		
OPER	2F1	13.55 R	10.42	212.50	0.0	0.00	0.00	0.00			
		-34.91 L	-26.86	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	13.46 L	10.35	155.00	0.0	0.00	0.00	0.00			
		-50.23 L	-38.64	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	14.37 L	11.05	151.00	0.0	0.00	0.00	0.00			
		-54.40 L	-41.85	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	28.23 L	21.71	155.50	0.0	0.00	0.00	0.00			
		-46.77 L	-35.97	175.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.39	2.55	6.64	2.87	HS 50.98	91.8
HS20	12.31	4.25	11.07	4.79	HS 84.96	152.9
2F1	23.52	7.18	21.16	8.10	0.00	107.7
3F1	23.68	4.99	21.30	5.63	0.00	114.8
4F1	22.18	4.61	19.95	5.20	0.00	124.4
5C1	11.29	5.36	10.16	6.04	0.00	214.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.5	65.2
OPER	151.3	-124.1	108.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	2F1	-2.28	17.46	-1.75	13.43	0.00	0.00	0.00	0.00
OPER	3F1	-3.28	24.22	-2.52	18.63	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	25.11	-2.71	19.31	0.00	0.00	0.00	0.00
OPER	5C1	-3.50	22.87	-2.69	17.59	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.46	2.17	HS 43.36	78.1
HS20	34.09	3.61	HS 72.27	130.1
2F1	54.52	6.22	0.00	93.3
3F1	37.90	4.48	0.00	103.1
4F1	35.19	4.33	0.00	116.8
5C1	35.46	4.75	0.00	190.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.8	160.4	-174.8	160.4	-174.8	178.4	-156.8	178.4	-
OPER 261.4	279.4	-279.4	279.4	-279.4	297.4	-261.4	297.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50	
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50
OPER	HS20	16.43 R	12.64	230.50	0.0	25.89	19.91	202.50	
		-59.00 R	-45.39	209.00	0.0	-53.36	-41.05	190.00	212.50
OPER	2F1	13.55 R	10.42	212.50	0.0	0.00	0.00	0.00	
		-34.91 L	-26.86	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	13.46 L	10.35	155.00	0.0	0.00	0.00	0.00	
		-50.23 L	-38.64	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	14.37 L	11.05	151.00	0.0	0.00	0.00	0.00	
		-54.40 L	-41.85	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	28.23 L	21.71	155.50	0.0	0.00	0.00	0.00	
		-46.77 L	-35.97	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.89	2.66	6.89	2.66	HS 53.16	95.7
HS20	11.49	4.43	11.49	4.43	HS 88.61	159.5
2F1	21.95	7.49	21.95	7.49	0.00	112.3
3F1	22.10	5.20	22.10	5.20	0.00	119.7
4F1	20.70	4.80	20.70	4.80	0.00	129.7

5C1	10.54	5.59	10.54	5.59	0.00	223.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00			
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00		
OPER	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00			
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00		
OPER	2F1	38.40 R	29.54	215.00	0.0	0.00	0.00	0.00			
		-29.82 L	-22.94	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	46.84 R	36.03	219.00	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	43.14 R	33.19	219.00	0.0	0.00	0.00	0.00			
		-46.46 L	-35.74	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	54.41 L	41.85	158.00	0.0	0.00	0.00	0.00			
		-40.26 L	-30.97	178.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.05	3.51	2.72	3.93	HS 54.46	98.0
HS20	5.08	5.84	4.54	6.54	HS 90.77	163.4
2F1	7.86	8.97	7.03	10.04	0.00	105.4
3F1	6.45	6.23	5.76	6.98	0.00	132.5
4F1	7.00	5.76	6.26	6.44	0.00	155.4
5C1	5.55	6.64	4.96	7.44	0.00	198.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.200	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-3.64	25.34	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	HS20	-3.64	25.34	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	2F1	-2.28	15.22	-1.75	11.71	0.00	0.00	0.00	0.00
OPER	3F1	-3.28	20.71	-2.52	15.93	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	21.27	-2.71	16.36	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	19.65	-4.06	15.12	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.14	2.62	HS 52.43	94.4
HS20	26.90	4.37	HS 87.38	157.3
2F1	53.61	7.27	0.00	109.1
3F1	37.27	5.34	0.00	122.9
4F1	34.60	5.20	0.00	140.5
5C1	23.13	5.63	0.00	225.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00	
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00
OPER	HS20	59.46 R	45.74	233.00	0.0	44.78	34.45	205.00	
		-45.76 L	-35.20	167.00	0.0	-35.35	-27.19	190.00	140.00
OPER	2F1	38.40 R	29.54	215.00	0.0	0.00	0.00	0.00	
		-29.82 L	-22.94	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	46.84 R	36.03	219.00	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	43.14 R	33.19	219.00	0.0	0.00	0.00	0.00	
		-46.46 L	-35.74	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	54.41 L	41.85	158.00	0.0	0.00	0.00	0.00	
		-40.26 L	-30.97	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.83	3.65	2.83	3.65	HS 56.63	101.9
HS20	4.72	6.08	4.72	6.08	HS 94.38	169.9
2F1	7.31	9.33	7.31	9.33	0.00	109.6
3F1	5.99	6.48	5.99	6.48	0.00	137.8
4F1	6.50	5.99	6.50	5.99	0.00	161.7

5C1	5.16	6.91	5.16	6.91	0.00	206.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.7 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.4	154.9	-186.6
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50			
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00		
OPER	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50			
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00		
OPER	2F1	56.41 R	43.39	217.50	0.0	0.00	0.00	0.00			
		-24.73 L	-19.02	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.67 R	55.13	221.50	0.0	0.00	0.00	0.00			
		-35.57 L	-27.36	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	73.62 R	56.63	221.50	0.0	0.00	0.00	0.00			
		-38.53 L	-29.64	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	72.30 L	55.62	160.50	0.0	0.00	0.00	0.00			
		-36.39 L	-28.00	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.02	4.41	1.80	4.92	HS 35.96	64.7
HS20	3.37	7.36	3.00	8.20	HS 59.94	107.9
2F1	5.14	11.29	4.58	12.58	0.00	68.7
3F1	4.05	7.84	3.60	8.74	0.00	82.9
4F1	3.94	7.24	3.51	8.07	0.00	94.7
5C1	4.01	7.67	3.57	8.55	0.00	142.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	3.4
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-120.0	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	2F1	-3.63	12.82	-2.79	9.86	0.00	0.00	0.00	0.00
OPER	3F1	-3.95	17.07	-3.04	13.13	0.00	0.00	0.00	0.00
OPER	4F1	-3.53	17.45	-2.71	13.42	0.00	0.00	0.00	0.00
OPER	5C1	-7.30	16.45	-5.61	12.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.55	3.30	HS 65.98	118.8
HS20	17.59	5.50	HS 109.97	197.9
2F1	33.09	8.79	0.00	131.9
3F1	30.40	6.61	0.00	152.0
4F1	34.01	6.46	0.00	174.5
5C1	16.45	6.85	0.00	274.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.7 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.8	279.4	-279.4	279.4	-279.4	269.0	-289.8	269.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50	
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00
OPER	HS20	86.17 R	66.29	235.50	0.0	64.63	49.71	207.50	
		-37.94 L	-29.19	167.00	0.0	-30.08	-23.14	190.00	0.00
OPER	2F1	56.41 R	43.39	217.50	0.0	0.00	0.00	0.00	
		-24.73 L	-19.02	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.67 R	55.13	221.50	0.0	0.00	0.00	0.00	
		-35.57 L	-27.36	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	73.62 R	56.63	221.50	0.0	0.00	0.00	0.00	
		-38.53 L	-29.64	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	72.30 L	55.62	160.50	0.0	0.00	0.00	0.00	
		-36.39 L	-28.00	179.00	0.0	0.00	0.00	0.00	0.00

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	1.87	4.58	1.87	4.58	HS 37.46	67.4
HS20	3.12	7.64	3.12	7.64	HS 62.43	112.4
2F1	4.77	11.72	4.77	11.72	0.00	71.5
3F1	3.75	8.15	3.75	8.15	0.00	86.3
4F1	3.65	7.52	3.65	7.52	0.00	98.6

5C1	3.72	7.96	3.72	7.96	0.00	148.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.55		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.3	-171.3	151.1	-190.5
OPER	300.6C	-268.7	268.7	-300.6C	283.8	-285.5	251.8	-317.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00			
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00		0.00	
OPER	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00			
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00		0.00	
OPER	2F1	66.15 R	50.88	220.00	0.0	0.00	0.00	0.00		0.00	
		-19.63 L	-15.10	182.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	84.67 R	65.13	220.00	0.0	0.00	0.00	0.00		0.00	
		-28.25 L	-21.73	180.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	90.83 R	69.87	224.00	0.0	0.00	0.00	0.00		0.00	
		-30.59 L	-23.53	177.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	83.76 R	64.43	222.00	0.0	0.00	0.00	0.00		0.00	
		-34.12 L	-26.25	180.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.77	5.69	1.57	6.32	HS 31.38	56.5
HS20	2.95	9.48	2.62	10.54	HS 52.29	94.1
2F1	4.29	14.54	3.81	16.17	0.00	57.1
3F1	3.35	10.11	2.97	11.24	0.00	68.4
4F1	3.12	9.33	2.77	10.38	0.00	74.8
5C1	3.39	8.37	3.01	9.31	0.00	120.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S01

Check Point I. D.

9.400

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1

0.0

1.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)

INV. 90.8 -70.8 68.9

OPER 151.3 -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	-9.12	16.75	-7.02	12.88	-9.40	14.76	-7.23	11.35
OPER	HS20	-9.12	16.75	-7.02	12.88	-9.40	14.76	-7.23	11.35
OPER	2F1	-5.71	10.36	-4.39	7.97	0.00	0.00	0.00	0.00
OPER	3F1	-6.82	13.43	-5.25	10.33	0.00	0.00	0.00	0.00
OPER	4F1	-5.83	13.41	-4.49	10.32	0.00	0.00	0.00	0.00
OPER	5C1	-9.45	13.40	-7.27	10.31	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.52	4.11	HS 82.27	148.1
HS20	12.54	6.86	HS 137.11	246.8
2F1	20.66	11.08	0.00	166.2
3F1	17.29	8.55	0.00	196.6
4F1	20.21	8.56	0.00	231.2
5C1	12.48	8.57	0.00	342.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.1 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00	
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00
OPER	HS20	96.30 R	74.08	238.00	0.0	76.22	58.63	210.00	
		-30.13 L	-23.17	167.00	0.0	-26.61	-20.47	190.00	0.00
OPER	2F1	66.15 R	50.88	220.00	0.0	0.00	0.00	0.00	
		-19.63 L	-15.10	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.67 R	65.13	220.00	0.0	0.00	0.00	0.00	
		-28.25 L	-21.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.83 R	69.87	224.00	0.0	0.00	0.00	0.00	
		-30.59 L	-23.53	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	83.76 R	64.43	222.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.64	5.90	1.64	5.90	HS 32.72	58.9
HS20	2.73	9.83	2.73	9.83	HS 54.53	98.1
2F1	3.97	15.09	3.97	15.09	0.00	59.5
3F1	3.10	10.49	3.10	10.49	0.00	71.3
4F1	2.89	9.68	2.89	9.68	0.00	78.0

5C1	3.13	8.68	3.13	8.68	0.00	125.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.214

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.2 17.0

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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50			
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00			0.00
OPER	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50			
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00			0.00
OPER	2F1	67.18 L	51.67	202.50	0.0	0.00	0.00	0.00			0.00
		-16.43 R	-12.64	242.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	89.77 R	69.05	222.50	0.0	0.00	0.00	0.00			0.00
		-23.64 R	-18.18	245.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	93.76 L	72.12	198.50	0.0	0.00	0.00	0.00			0.00
		-25.55 R	-19.65	248.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	85.68 L	65.90	161.50	0.0	0.00	0.00	0.00			0.00
		-34.40 R	-26.46	243.50	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.80	6.30	1.59	7.01	HS 31.86	57.3
HS20	2.99	10.51	2.65	11.68	HS 53.10	95.6
2F1	4.20	17.45	3.73	19.40	0.00	55.9
3F1	3.15	12.13	2.79	13.49	0.00	64.2
4F1	3.01	11.22	2.67	12.48	0.00	72.1
5C1	3.30	8.34	2.92	9.27	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-0.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.5	70.1
OPER	151.3	-115.8	116.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	2F1	-8.01	7.94	-6.16	6.11	0.00	0.00	0.00	0.00
OPER	3F1	-10.05	9.95	-7.73	7.65	0.00	0.00	0.00	0.00
OPER	4F1	-9.40	9.28	-7.23	7.14	0.00	0.00	0.00	0.00
OPER	5C1	-11.66	10.93	-8.97	8.41	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.23	5.36	HS 104.60	188.3
HS20	8.72	8.94	HS 174.34	313.8
2F1	14.46	14.73	0.00	216.9
3F1	11.53	11.75	0.00	265.2
4F1	12.33	12.60	0.00	332.9
5C1	9.93	10.69	0.00	397.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.2 17.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50	
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00	0.00
OPER	HS20	94.36 R	72.58	226.50	0.0	80.36	61.82	212.50	
		-27.30 R	-21.00	258.00	0.0	-24.32	-18.71	235.00	0.00
OPER	2F1	67.18 L	51.67	202.50	0.0	0.00	0.00	0.00	
		-16.43 R	-12.64	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	89.77 R	69.05	222.50	0.0	0.00	0.00	0.00	
		-23.64 R	-18.18	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.76 L	72.12	198.50	0.0	0.00	0.00	0.00	
		-25.55 R	-19.65	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	85.68 L	65.90	161.50	0.0	0.00	0.00	0.00	
		-34.40 R	-26.46	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.66	6.54	1.66	6.54	HS 33.23	59.8
HS20	2.77	10.90	2.77	10.90	HS 55.38	99.7
2F1	3.89	18.11	3.89	18.11	0.00	58.3
3F1	2.91	12.59	2.91	12.59	0.00	66.9
4F1	2.79	11.65	2.79	11.65	0.00	75.2

5C1	3.05	8.65	3.05	8.65	0.00	122.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.699
			999999.000
			98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 13.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.9	-169.6	152.7	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.5	-282.7	254.6	-314.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00			
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00		
OPER	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00			
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00		
OPER	2F1	65.95 L	50.73	205.00	0.0	0.00	0.00	0.00			
		-22.12 R	-17.02	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	84.33 L	64.87	205.00	0.0	0.00	0.00	0.00			
		-31.82 R	-24.48	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.47 L	69.60	201.00	0.0	0.00	0.00	0.00			
		-34.40 R	-26.46	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.03 L	62.33	203.00	0.0	0.00	0.00	0.00			
		-36.33 R	-27.95	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.78	4.62	1.58	5.14	HS 31.66	57.0
HS20	2.97	7.69	2.64	8.56	HS 52.76	95.0
2F1	4.34	12.78	3.86	14.23	0.00	57.9
3F1	3.40	8.89	3.02	9.89	0.00	69.4
4F1	3.17	8.22	2.81	9.15	0.00	76.0
5C1	3.54	7.78	3.14	8.66	0.00	125.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.2	71.4
OPER	151.3	-113.7	119.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	2F1	-10.44	5.65	-8.03	4.35	0.00	0.00	0.00	0.00
OPER	3F1	-13.54	6.72	-10.42	5.17	0.00	0.00	0.00	0.00
OPER	4F1	-13.53	5.68	-10.41	4.37	0.00	0.00	0.00	0.00
OPER	5C1	-13.88	8.66	-10.68	6.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.02	7.91	HS 80.32	144.6
HS20	6.69	13.19	HS 133.87	241.0
2F1	10.89	21.07	0.00	163.4
3F1	8.40	17.71	0.00	193.2
4F1	8.40	20.94	0.00	226.9
5C1	8.19	13.74	0.00	327.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 13.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.1	173.3	-162.0	173.3	-162.0	159.2	-176.1	159.2	-
OPER 293.5	279.4	-279.4	279.4	-279.4	265.3	-293.5	265.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00	
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00
OPER	HS20	96.49 L	74.22	187.00	0.0	74.80	57.54	215.00	
		-36.75 R	-28.27	258.00	0.0	-28.46	-21.89	235.00	0.00
OPER	2F1	65.95 L	50.73	205.00	0.0	0.00	0.00	0.00	
		-22.12 R	-17.02	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	84.33 L	64.87	205.00	0.0	0.00	0.00	0.00	
		-31.82 R	-24.48	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.47 L	69.60	201.00	0.0	0.00	0.00	0.00	
		-34.40 R	-26.46	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.03 L	62.33	203.00	0.0	0.00	0.00	0.00	
		-36.33 R	-27.95	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.65	4.79	1.65	4.79	HS 32.99	59.4
HS20	2.75	7.99	2.75	7.99	HS 54.99	99.0
2F1	4.02	13.27	4.02	13.27	0.00	60.3
3F1	3.15	9.22	3.15	9.22	0.00	72.4
4F1	2.93	8.53	2.93	8.53	0.00	79.2

5C1	3.27	8.08	3.27	8.08	0.00	131.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.699
			999999.000
			98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 9.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 4.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50			
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00		
OPER	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50			
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00		
OPER	2F1	55.98 L	43.07	207.50	0.0	0.00	0.00	0.00			
		-27.82 R	-21.40	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	71.07 L	54.67	203.50	0.0	0.00	0.00	0.00			
		-40.01 R	-30.78	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	72.96 L	56.13	203.50	0.0	0.00	0.00	0.00			
		-43.25 R	-33.27	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	66.81 L	51.39	201.50	0.0	0.00	0.00	0.00			
		-39.84 R	-30.64	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.07	3.55	1.85	3.97	HS 36.92	66.5
HS20	3.45	5.92	3.08	6.61	HS 61.54	110.8
2F1	5.28	9.83	4.71	10.98	0.00	70.7
3F1	4.16	6.84	3.71	7.64	0.00	85.4
4F1	4.05	6.32	3.62	7.06	0.00	97.6
5C1	4.43	6.87	3.95	7.67	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.4	-4.3	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.0	72.7
OPER	151.3	-111.6	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	2F1	-12.90	3.57	-9.92	2.75	0.00	0.00	0.00	0.00
OPER	3F1	-17.18	3.84	-13.21	2.95	0.00	0.00	0.00	0.00
OPER	4F1	-17.57	3.16	-13.51	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-16.82	6.58	-12.94	5.06	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.24	11.25	HS 64.84	116.7
HS20	5.40	18.75	HS 108.06	194.5
2F1	8.65	33.88	0.00	129.8
3F1	6.50	31.57	0.00	149.5
4F1	6.36	38.29	0.00	171.6
5C1	6.64	18.41	0.00	265.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 4.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.6	169.6	-165.7	169.6	-165.7	164.7	-170.6	164.7	-
OPER 284.3	279.4	-279.4	279.4	-279.4	274.5	-284.3	274.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50	
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00
OPER	HS20	85.73 L	65.95	189.50	0.0	61.84	47.57	217.50	
		-46.21 R	-35.55	258.00	0.0	-32.60	-25.07	235.00	0.00
OPER	2F1	55.98 L	43.07	207.50	0.0	0.00	0.00	0.00	
		-27.82 R	-21.40	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	71.07 L	54.67	203.50	0.0	0.00	0.00	0.00	
		-40.01 R	-30.78	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	72.96 L	56.13	203.50	0.0	0.00	0.00	0.00	
		-43.25 R	-33.27	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	66.81 L	51.39	201.50	0.0	0.00	0.00	0.00	
		-39.84 R	-30.64	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	3.69	1.92	3.69	HS 38.43	69.2
HS20	3.20	6.15	3.20	6.15	HS 64.04	115.3
2F1	4.90	10.22	4.90	10.22	0.00	73.6
3F1	3.86	7.11	3.86	7.11	0.00	88.8
4F1	3.76	6.57	3.76	6.57	0.00	101.6

5C1	4.11	7.14	4.11	7.14	0.00	164.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.699
			999999.000
			98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.0 -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	186.1	-155.5	166.9	-174.7
OPER	300.6C	-268.7	268.7	-300.6C	310.2	-259.1	278.2	-291.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00			
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50		
OPER	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00			
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50		
OPER	2F1	37.81 L	29.08	210.00	0.0	0.00	0.00	0.00			
		-33.51 R	-25.77	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	45.95 L	35.35	206.00	0.0	0.00	0.00	0.00			
		-48.20 R	-37.08	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	42.32 L	32.55	206.00	0.0	0.00	0.00	0.00			
		-52.10 R	-40.08	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	46.42 L	35.71	169.00	0.0	0.00	0.00	0.00			
		-44.85 R	-34.50	247.50	0.0	0.00	0.00	0.00	0.00	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	3.18	2.79	2.85	3.14	HS 55.86	100.6
HS20	5.30	4.66	4.76	5.23	HS 93.10	167.6
2F1	8.20	7.73	7.36	8.69	0.00	110.4
3F1	6.75	5.38	6.05	6.04	0.00	123.7
4F1	7.33	4.97	6.57	5.59	0.00	134.3
5C1	6.68	5.78	5.99	6.49	0.00	231.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.22
OPER	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.22
OPER	2F1	-15.29	2.04	-11.76	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-20.82	2.93	-16.02	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-21.40	3.16	-16.46	2.43	0.00	0.00	0.00	0.00
OPER	5C1	-20.12	4.74	-15.48	3.65	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.58	17.63	HS 51.52	92.7
HS20	4.29	29.38	HS 85.87	154.6
2F1	7.17	60.46	0.00	107.5
3F1	5.26	42.02	0.00	121.0
4F1	5.12	38.94	0.00	138.3
5C1	5.45	25.99	0.00	217.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.0 -8.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 161.9	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
OPER 269.9	279.4	-279.4	279.4	-279.4	288.9	-269.9	288.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00	
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50
OPER	HS20	58.49 L	45.00	192.00	0.0	41.39	31.84	220.00	
		-55.67 R	-42.82	258.00	0.0	-37.46	-28.81	235.00	202.50
OPER	2F1	37.81 L	29.08	210.00	0.0	0.00	0.00	0.00	
		-33.51 R	-25.77	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	45.95 L	35.35	206.00	0.0	0.00	0.00	0.00	
		-48.20 R	-37.08	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	42.32 L	32.55	206.00	0.0	0.00	0.00	0.00	
		-52.10 R	-40.08	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	46.42 L	35.71	169.00	0.0	0.00	0.00	0.00	
		-44.85 R	-34.50	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.96	2.91	2.96	2.91	HS 58.18	104.7
HS20	4.94	4.85	4.94	4.85	HS 96.96	174.5
2F1	7.64	8.05	7.64	8.05	0.00	114.6
3F1	6.29	5.60	6.29	5.60	0.00	128.8
4F1	6.83	5.18	6.83	5.18	0.00	139.8

5C1	6.22	6.02	6.22	6.02	0.00	240.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.699	999999.000	98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.6 -26.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	197.8	-143.7	178.6	-162.9
OPER	300.6C	-268.7	268.7	-300.6C	329.7	-239.6	297.7	-271.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50			
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50		
OPER	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50			
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50		
OPER	2F1	12.95 L	9.96	212.50	0.0	0.00	0.00	0.00			
		-39.20 R	-30.15	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	9.59 L	7.38	208.50	0.0	0.00	0.00	0.00			
		-56.39 R	-43.37	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	8.95 L	6.89	176.00	0.0	0.00	0.00	0.00			
		-60.96 R	-46.89	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	21.51 L	16.55	171.50	0.0	0.00	0.00	0.00			
		-55.01 R	-42.32	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.39	2.12	8.48	2.40	HS 42.32	76.2
HS20	15.65	3.53	14.13	4.00	HS 70.53	127.0
2F1	25.47	6.11	23.00	6.93	0.00	91.7
3F1	34.38	4.25	31.04	4.82	0.00	97.7
4F1	36.82	3.93	33.25	4.45	0.00	106.1
5C1	15.33	4.36	13.84	4.94	0.00	174.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	9.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-8.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.5	75.1
OPER	151.3	-107.5	125.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.30
OPER	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.30
OPER	2F1	-17.51	2.04	-13.47	1.57	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	2.93	-18.70	2.25	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	3.17	-19.40	2.44	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	3.16	-18.10	2.43	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.13	24.04	HS 42.63	76.7
HS20	3.55	40.06	HS 71.06	127.9
2F1	6.14	61.47	0.00	92.1
3F1	4.42	42.73	0.00	101.7
4F1	4.26	39.45	0.00	115.1
5C1	4.57	39.59	0.00	182.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 9.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -26.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 150.2	156.0	-179.3	156.0	-179.3	185.1	-150.2	185.1	-
OPER 250.3	279.4	-279.4	279.4	-279.4	308.5	-250.3	308.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50	
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50
OPER	HS20	15.19 L	11.69	194.50	0.0	21.07	16.20	222.50	
		-67.93 L	-52.25	216.00	0.0	-58.56	-45.05	235.00	212.50
OPER	2F1	12.95 L	9.96	212.50	0.0	0.00	0.00	0.00	
		-39.20 R	-30.15	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	9.59 L	7.38	208.50	0.0	0.00	0.00	0.00	
		-56.39 R	-43.37	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	8.95 L	6.89	176.00	0.0	0.00	0.00	0.00	
		-60.96 R	-46.89	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	21.51 L	16.55	171.50	0.0	0.00	0.00	0.00	
		-55.01 R	-42.32	253.50	0.0	0.00	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	8.79	2.21	8.79	2.21	HS 44.22	79.6
HS20	14.64	3.68	14.64	3.68	HS 73.70	132.7
2F1	23.83	6.39	23.83	6.39	0.00	95.8
3F1	32.16	4.44	32.16	4.44	0.00	102.1
4F1	34.45	4.11	34.45	4.11	0.00	110.9

5C1	14.34	4.55	14.34	4.55	0.00	182.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.699
			999999.000
			98.489

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		41.71		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00		215.00	
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00			
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00		215.00	
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00			
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00			
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00			
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00			
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	14.80	1.25	11.54	1.78
HS20	24.67	2.08	19.24	2.96
2F1	37.85	4.79	29.52	6.81
3F1	26.31	3.20	20.52	4.55
4F1	24.30	2.65	18.95	3.78
5C1	31.77	2.92	24.78	4.16
HS	24.96		44.9	
HS	41.59		74.9	
	0.00		71.8	
	0.00		73.5	
	0.00		71.6	
	0.00		116.7	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000HS20 HS20
2F1
3F1
4F1
5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-8.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	2F1	-17.51	20.02	-13.47	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-24.31	28.68	-18.70	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-25.22	30.81	-19.40	23.70	0.00	0.00	0.00	0.00
OPER	5C1	-23.53	27.33	-18.10	21.02	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.82	1.96	HS 36.49	65.7
HS20	3.04	3.26	HS 60.81	109.5
2F1	5.42	5.98	0.00	81.3
3F1	3.83	4.18	0.00	88.2
4F1	3.62	3.89	0.00	97.8
5C1	3.95	4.38	0.00	158.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00	
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00	
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00	
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00	
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.93	1.31	11.93	1.31	HS 26.20	47.2
HS20	19.88	2.18	19.88	2.18	HS 43.67	78.6
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	109.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	215.00		
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00			
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	215.00		
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00			
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00	0.00		
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00	0.00		
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00	0.00		
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00	0.00		
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	14.80	1.25	11.54	1.78	HS 24.96	44.9
HS20	24.67	2.08	19.24	2.96	HS 41.59	74.9
2F1	37.85	4.79	29.52	6.81	0.00	71.8
3F1	26.31	3.20	20.52	4.55	0.00	73.5
4F1	24.30	2.65	18.95	3.78	0.00	71.6
5C1	31.77	2.92	24.78	4.16	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-10.1	11.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	2F1	-19.46	20.02	-14.97	15.40	0.00	0.00	0.00	0.00
OPER	3F1	-27.50	28.68	-21.16	22.06	0.00	0.00	0.00	0.00
OPER	4F1	-29.10	30.81	-22.38	23.70	0.00	0.00	0.00	0.00
OPER	5C1	-26.68	27.33	-20.52	21.02	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.82	1.96	HS 36.49	65.7
HS20	3.04	3.26	HS 60.81	109.5
2F1	5.42	5.98	0.00	81.3
3F1	3.83	4.18	0.00	88.2
4F1	3.62	3.89	0.00	97.8
5C1	3.95	4.38	0.00	158.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -4.5 -49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	HS20	16.76 L	12.89	167.00	0.0	12.38	9.53	190.00	
		-103.30 R	-79.46	246.50	0.0	-95.85	-73.73	235.00	215.00
OPER	2F1	10.92 L	8.40	182.50	0.0	0.00	0.00	0.00	
		-44.89 R	-34.53	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.71 L	12.09	180.00	0.0	0.00	0.00	0.00	
		-67.21 L	-51.70	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.02 L	13.09	177.00	0.0	0.00	0.00	0.00	
		-81.02 L	-62.32	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	13.01 L	10.01	140.50	0.0	0.00	0.00	0.00	
		-73.62 R	-56.63	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.93	1.31	11.93	1.31	HS 26.20	47.2
HS20	19.88	2.18	19.88	2.18	HS 43.67	78.6
2F1	30.50	5.03	30.50	5.03	0.00	75.4
3F1	21.20	3.36	21.20	3.36	0.00	77.2
4F1	19.58	2.78	19.58	2.78	0.00	75.2

5C1	25.60	3.06	25.60	3.06	0.00	122.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.20	35.20	2.861
			999999.000
			91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.0 -22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	230.7	-176.8	206.5	-200.9
OPER	359.7C	-319.4	319.4	-359.7C	384.5	-294.6	344.2	-334.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50			
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00		
OPER	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50			
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00		
OPER	2F1	13.37 R	10.28	237.50	0.0	0.00	0.00	0.00			
		-36.69 L	-28.22	207.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.14 L	10.88	180.00	0.0	0.00	0.00	0.00			
		-52.78 L	-40.60	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.10 L	11.61	176.00	0.0	0.00	0.00	0.00			
		-57.17 L	-43.97	202.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	29.41 L	22.62	180.50	0.0	0.00	0.00	0.00			
		-52.01 R	-40.01	261.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.59	2.85	8.59	3.24	HS 57.01	102.6
HS20	15.99	4.75	14.31	5.40	HS 95.01	171.0
2F1	28.76	8.03	25.75	9.13	0.00	120.5
3F1	27.18	5.58	24.34	6.34	0.00	128.4
4F1	25.46	5.15	22.80	5.86	0.00	139.2
5C1	13.07	5.66	11.70	6.44	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.9	0.0	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-85.8	73.1
OPER	172.1	-142.9	121.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.64	32.71	-0.49	25.16	-1.34	24.40	-1.03	18.77
OPER	HS20	-0.64	32.71	-0.49	25.16	-1.34	24.40	-1.03	18.77
OPER	2F1	-0.44	18.39	-0.34	14.15	0.00	0.00	0.00	0.00
OPER	3F1	-0.63	25.94	-0.48	19.96	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	27.32	-0.52	21.02	0.00	0.00	0.00	0.00
OPER	5C1	-1.00	24.64	-0.77	18.95	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.91	2.23	HS 44.69	80.4
HS20	106.52	3.72	HS 74.48	134.1
2F1	327.14	6.62	0.00	99.3
3F1	227.40	4.70	0.00	108.0
4F1	210.74	4.46	0.00	120.4
5C1	143.15	4.94	0.00	197.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.5	189.4	-209.2	189.4	-209.2	214.2	-184.5	214.2	-
OPER 307.4	332.2	-332.2	332.2	-332.2	357.0	-307.4	357.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50	
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00
OPER	HS20	12.56 L	9.66	162.00	0.0	24.05	18.50	227.50	
		-62.02 R	-47.71	234.00	0.0	-57.85	-44.50	215.00	240.00
OPER	2F1	13.37 R	10.28	237.50	0.0	0.00	0.00	0.00	
		-36.69 L	-28.22	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.14 L	10.88	180.00	0.0	0.00	0.00	0.00	
		-52.78 L	-40.60	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.10 L	11.61	176.00	0.0	0.00	0.00	0.00	
		-57.17 L	-43.97	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	29.41 L	22.62	180.50	0.0	0.00	0.00	0.00	
		-52.01 R	-40.01	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.91	2.97	8.91	2.97	HS 59.48	107.1
HS20	14.84	4.96	14.84	4.96	HS 99.13	178.4
2F1	26.70	8.38	26.70	8.38	0.00	125.7
3F1	25.24	5.82	25.24	5.82	0.00	134.0
4F1	23.64	5.38	23.64	5.38	0.00	145.2

5C1	12.14	5.91	12.14	5.91	0.00	236.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.20	35.20	2.861
			999999.000
			91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.2
OPER	359.7C	-319.4	319.4	-359.7C	360.7	-318.4	320.4	-358.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00			
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00		
OPER	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00			
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00		
OPER	2F1	41.11 R	31.62	240.00	0.0	0.00	0.00	0.00			
		-32.61 L	-25.09	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	50.94 R	39.18	244.00	0.0	0.00	0.00	0.00			
		-46.92 L	-36.09	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.57 R	36.59	248.00	0.0	0.00	0.00	0.00			
		-50.81 L	-39.09	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	58.56 L	45.05	183.00	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.38	3.82	3.01	4.30	HS 60.11	108.2
HS20	5.64	6.36	5.01	7.17	HS 100.18	180.3
2F1	8.77	9.76	7.79	11.00	0.00	116.9
3F1	7.08	6.79	6.29	7.64	0.00	144.7
4F1	7.58	6.27	6.74	7.06	0.00	169.2
5C1	6.16	7.18	5.47	8.09	0.00	218.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.7	0.0	7.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.5	74.3
OPER	172.1	-140.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.97	28.22	-0.75	21.70	-2.83	21.94	-2.18	16.88
OPER	HS20	-0.97	28.22	-0.75	21.70	-2.83	21.94	-2.18	16.88
OPER	2F1	-1.41	16.52	-1.08	12.71	0.00	0.00	0.00	0.00
OPER	3F1	-1.17	22.86	-0.90	17.59	0.00	0.00	0.00	0.00
OPER	4F1	-0.68	23.48	-0.52	18.06	0.00	0.00	0.00	0.00
OPER	5C1	-2.52	21.70	-1.94	16.69	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	29.87	2.63	HS 52.69	94.8
HS20	49.79	4.39	HS 87.82	158.1
2F1	100.16	7.50	0.00	112.5
3F1	120.64	5.42	0.00	124.6
4F1	207.65	5.28	0.00	142.5
5C1	55.95	5.71	0.00	228.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.7	198.9	-199.7	198.9	-199.7	199.9	-198.7	199.9	-
OPER 331.2	332.2	-332.2	332.2	-332.2	333.2	-331.2	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00	
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00
OPER	HS20	63.97 R	49.20	258.00	0.0	47.55	36.58	230.00	
		-50.04 L	-38.49	192.00	0.0	-38.63	-29.72	215.00	165.00
OPER	2F1	41.11 R	31.62	240.00	0.0	0.00	0.00	0.00	
		-32.61 L	-25.09	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	50.94 R	39.18	244.00	0.0	0.00	0.00	0.00	
		-46.92 L	-36.09	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.57 R	36.59	248.00	0.0	0.00	0.00	0.00	
		-50.81 L	-39.09	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	58.56 L	45.05	183.00	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.12	3.97	3.12	3.97	HS 62.51	112.5
HS20	5.21	6.62	5.21	6.62	HS 104.18	187.5
2F1	8.10	10.16	8.10	10.16	0.00	121.6
3F1	6.54	7.06	6.54	7.06	0.00	150.4
4F1	7.00	6.52	7.00	6.52	0.00	176.0

5C1	5.69	7.47	5.69	7.47	0.00	227.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z (Fy * Z)
Positive Top	Bending Bott.	Negative Top	Bending Bott.	
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.3	-202.2	181.1	-226.4
OPER	359.7C	-319.4	319.4	-359.7C	342.1	-337.0	301.8	-377.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50			
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00		
OPER	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50			
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00		
OPER	2F1	63.30 R	48.69	242.50	0.0	0.00	0.00	0.00			
		-28.54 L	-21.95	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	81.80 R	62.93	246.50	0.0	0.00	0.00	0.00			
		-41.05 L	-31.58	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	83.88 R	64.52	246.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.06 L	62.36	185.50	0.0	0.00	0.00	0.00			
		-38.79 L	-29.84	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.06	4.62	1.82	5.17	HS 36.39	65.5
HS20	3.44	7.70	3.03	8.62	HS 60.65	109.2
2F1	5.40	11.81	4.77	13.22	0.00	71.5
3F1	4.18	8.21	3.69	9.19	0.00	84.9
4F1	4.08	7.58	3.60	8.48	0.00	97.2
5C1	4.22	8.69	3.72	9.73	0.00	148.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	5.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.2	75.6
OPER	172.1	-138.7	126.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.02	23.31	-2.32	17.93	-4.64	19.35	-3.57	14.88
OPER	HS20	-3.02	23.31	-2.32	17.93	-4.64	19.35	-3.57	14.88
OPER	2F1	-2.84	14.43	-2.19	11.10	0.00	0.00	0.00	0.00
OPER	3F1	-3.08	19.48	-2.37	14.99	0.00	0.00	0.00	0.00
OPER	4F1	-2.26	19.93	-1.74	15.33	0.00	0.00	0.00	0.00
OPER	5C1	-4.29	18.58	-3.30	14.29	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.95	3.24	HS 64.87	116.8
HS20	29.92	5.41	HS 108.12	194.6
2F1	48.81	8.73	0.00	131.0
3F1	44.99	6.47	0.00	148.7
4F1	61.33	6.32	0.00	170.7
5C1	32.31	6.78	0.00	271.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01

Check Point I. D. 10.300

Dead Load Moment 1.7

Superimposed Dead Load Moment 15.9

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.9	206.4	-192.3	206.4	-192.3	188.8	-209.9	188.8	-
OPER 349.8	332.2	-332.2	332.2	-332.2	314.6	-349.8	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50	
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00
OPER	HS20	99.53 R	76.56	260.50	0.0	71.95	55.35	232.50	
		-43.78 L	-33.68	192.00	0.0	-33.81	-26.00	215.00	165.00
OPER	2F1	63.30 R	48.69	242.50	0.0	0.00	0.00	0.00	
		-28.54 L	-21.95	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	81.80 R	62.93	246.50	0.0	0.00	0.00	0.00	
		-41.05 L	-31.58	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	83.88 R	64.52	246.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.06 L	62.36	185.50	0.0	0.00	0.00	0.00	
		-38.79 L	-29.84	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.90	4.79	1.90	4.79	HS 37.93	68.3
HS20	3.16	7.99	3.16	7.99	HS 63.22	113.8
2F1	4.97	12.26	4.97	12.26	0.00	74.6
3F1	3.85	8.52	3.85	8.52	0.00	88.5
4F1	3.75	7.87	3.75	7.87	0.00	101.3

5C1	3.88	9.02	3.88	9.02	0.00	155.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending			Modulus - Z
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	35.20	35.20	2.861	999999.000	91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		9.47		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.3	-210.2	173.1	-234.4
OPER	359.7C	-319.4	319.4	-359.7C	328.8	-350.3	288.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00			
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00		
OPER	HS20	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00			
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00		
OPER	2F1	77.81 R	59.86	245.00	0.0	0.00	0.00	0.00			
		-24.46 L	-18.82	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	245.00	0.0	0.00	0.00	0.00			
		-35.19 L	-27.07	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	107.73 R	82.87	249.00	0.0	0.00	0.00	0.00			
		-38.11 L	-29.32	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	98.63 R	75.87	247.00	0.0	0.00	0.00	0.00			
		-33.25 L	-25.57	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.71	5.60	1.50	6.24	HS	30.06
HS20	2.86	9.33	2.51	10.41	HS	50.11
2F1	4.22	14.32	3.71	15.97		0.00
3F1	3.28	9.95	2.88	11.10		0.00
4F1	3.05	9.19	2.68	10.25		0.00
5C1	3.33	10.54	2.92	11.75		0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.4	0.0	3.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.0	76.9
OPER	172.1	-136.7	128.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.09	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	HS20	-6.09	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	2F1	-4.55	12.15	-3.50	9.34	0.00	0.00	0.00	0.00
OPER	3F1	-5.40	15.85	-4.15	12.20	0.00	0.00	0.00	0.00
OPER	4F1	-4.61	16.26	-3.54	12.51	0.00	0.00	0.00	0.00
OPER	5C1	-6.27	15.75	-4.82	12.11	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.15	4.22	HS 84.48	152.1
HS20	20.25	7.04	HS 140.80	253.4
2F1	30.06	10.54	0.00	158.2
3F1	25.33	8.08	0.00	185.8
4F1	29.66	7.88	0.00	212.7
5C1	21.81	8.14	0.00	325.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 217.9	211.7	-187.0	211.7	-187.0	180.8	-217.9	180.8	-
OPER 363.1	332.2	-332.2	332.2	-332.2	301.3	-363.1	301.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00	
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00
OPER	HS20	115.16 R	88.59	263.00	0.0	88.90	68.38	235.00	
		-37.53 L	-28.87	192.00	0.0	-27.73	-21.33	215.00	0.00
OPER	2F1	77.81 R	59.86	245.00	0.0	0.00	0.00	0.00	
		-24.46 L	-18.82	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	245.00	0.0	0.00	0.00	0.00	
		-35.19 L	-27.07	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	107.73 R	82.87	249.00	0.0	0.00	0.00	0.00	
		-38.11 L	-29.32	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	98.63 R	75.87	247.00	0.0	0.00	0.00	0.00	
		-33.25 L	-25.57	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.57	5.80	1.57	5.80	HS 31.40	56.5
HS20	2.62	9.68	2.62	9.68	HS 52.33	94.2
2F1	3.87	14.85	3.87	14.85	0.00	58.1
3F1	3.00	10.32	3.00	10.32	0.00	69.1
4F1	2.80	9.53	2.80	9.53	0.00	75.5

5C1	3.06	10.92	3.06	10.92	0.00	122.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.20	35.20	2.861
			999999.000
			91.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.0	168.3	-239.2
OPER	359.7C	-319.4	319.4	-359.7C	320.7	-358.4	280.4	-398.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50			
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00		
OPER	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50			
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00		
OPER	2F1	82.85 R	63.73	247.50	0.0	0.00	0.00	0.00			
		-20.38 L	-15.68	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	113.07 L	86.98	227.50	0.0	0.00	0.00	0.00			
		-29.32 L	-22.56	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	120.28 R	92.52	251.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	107.89 L	82.99	225.50	0.0	0.00	0.00	0.00			
		-27.70 L	-21.31	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.59	6.88	1.39	7.65	HS	49.9
HS20	2.64	11.46	2.31	12.75	HS	83.2
2F1	3.87	17.58	3.38	19.56	0.00	50.8
3F1	2.84	12.22	2.48	13.60	0.00	57.0
4F1	2.67	11.28	2.33	12.55	0.00	63.0
5C1	2.97	12.94	2.60	14.39	0.00	104.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.7	78.1
OPER	172.1	-134.6	130.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.70	15.07	-7.46	11.59	-9.15	13.93	-7.04	10.71
OPER	HS20	-9.70	15.07	-7.46	11.59	-9.15	13.93	-7.04	10.71
OPER	2F1	-6.50	9.72	-5.00	7.47	0.00	0.00	0.00	0.00
OPER	3F1	-8.08	12.69	-6.22	9.76	0.00	0.00	0.00	0.00
OPER	4F1	-7.40	12.77	-5.69	9.82	0.00	0.00	0.00	0.00
OPER	5C1	-8.38	13.46	-6.45	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.32	5.18	HS 103.69	186.6
HS20	13.87	8.64	HS 172.82	311.1
2F1	20.71	13.40	0.00	201.0
3F1	16.64	10.26	0.00	235.9
4F1	18.19	10.20	0.00	275.4
5C1	16.05	9.68	0.00	387.0

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01

Check Point I. D. 10.500

Dead Load Moment 3.5

Superimposed Dead Load Moment 35.5

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.7	214.9	-183.7	214.9	-183.7	175.9	-222.7	175.9	-
OPER 371.2	332.2	-332.2	332.2	-332.2	293.2	-371.2	293.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50	
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00
OPER	HS20	121.30 R	93.31	265.50	0.0	99.09	76.22	237.50	
		-31.27 L	-24.06	192.00	0.0	-23.11	-17.77	215.00	0.00
OPER	2F1	82.85 R	63.73	247.50	0.0	0.00	0.00	0.00	
		-20.38 L	-15.68	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	113.07 L	86.98	227.50	0.0	0.00	0.00	0.00	
		-29.32 L	-22.56	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	120.28 R	92.52	251.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	107.89 L	82.99	225.50	0.0	0.00	0.00	0.00	
		-27.70 L	-21.31	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	7.12	1.45	7.12	HS 29.01	52.2
HS20	2.42	11.87	2.42	11.87	HS 48.35	87.0
2F1	3.54	18.21	3.54	18.21	0.00	53.1
3F1	2.59	12.66	2.59	12.66	0.00	59.6
4F1	2.44	11.69	2.44	11.69	0.00	65.8

5C1	2.72	13.40	2.72	13.40	0.00	108.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 38.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	190.8	-216.6	166.7	-240.8
OPER	359.7C	-319.4	319.4	-359.7C	318.0	-361.1	277.8	-401.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00			
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00		
OPER	HS20	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00			
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00		
OPER	2F1	86.55 L	66.58	230.00	0.0	0.00	0.00	0.00			
		-16.31 L	-12.54	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	115.46 L	88.82	230.00	0.0	0.00	0.00	0.00			
		-23.46 L	-18.05	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	123.73 L	95.18	226.00	0.0	0.00	0.00	0.00			
		-25.41 L	-19.54	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	110.37 L	84.90	228.00	0.0	0.00	0.00	0.00			
		-22.16 L	-17.05	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.48	8.66	1.30	9.62	HS 25.92	46.6
HS20	2.47	14.43	2.16	16.04	HS 43.19	77.7
2F1	3.67	22.14	3.21	24.61	0.00	48.1
3F1	2.75	15.39	2.41	17.11	0.00	55.3
4F1	2.57	14.21	2.24	15.80	0.00	60.6
5C1	2.88	16.29	2.52	18.11	0.00	100.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.0	0.0	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.86	11.47	-9.89	8.82	-11.81	11.17	-9.09	8.59
OPER	HS20	-12.86	11.47	-9.89	8.82	-11.81	11.17	-9.09	8.59
OPER	2F1	-8.65	7.17	-6.66	5.51	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	9.82	-8.56	7.55	0.00	0.00	0.00	0.00
OPER	4F1	-11.03	9.12	-8.49	7.01	0.00	0.00	0.00	0.00
OPER	5C1	-10.92	11.03	-8.40	8.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.18	6.93	HS 123.53	222.4
HS20	10.29	11.54	HS 205.89	370.6
2F1	15.30	18.47	0.00	229.5
3F1	11.90	13.48	0.00	273.7
4F1	12.00	14.52	0.00	324.1
5C1	12.12	12.00	0.00	480.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 38.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 224.3	216.0	-182.7	216.0	-182.7	174.3	-224.3	174.3	-
OPER 373.9	332.2	-332.2	332.2	-332.2	290.5	-373.9	290.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00	
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00
OPER	HS20	128.61 R	98.93	254.00	0.0	99.47	76.52	240.00	
		-25.02 L	-19.25	192.00	0.0	-18.49	-14.22	215.00	0.00
OPER	2F1	86.55 L	66.58	230.00	0.0	0.00	0.00	0.00	
		-16.31 L	-12.54	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	115.46 L	88.82	230.00	0.0	0.00	0.00	0.00	
		-23.46 L	-18.05	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	123.73 L	95.18	226.00	0.0	0.00	0.00	0.00	
		-25.41 L	-19.54	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	110.37 L	84.90	228.00	0.0	0.00	0.00	0.00	
		-22.16 L	-17.05	203.00	0.0	0.00	0.00	0.00	0.00

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	1.36	8.97	1.36	8.97	HS 27.11	48.8
HS20	2.26	14.94	2.26	14.94	HS 45.18	81.3
2F1	3.36	22.93	3.36	22.93	0.00	50.4
3F1	2.52	15.94	2.52	15.94	0.00	57.9
4F1	2.35	14.72	2.35	14.72	0.00	63.4

5C1	2.63	16.87	2.63	16.87	0.00	105.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.1	168.2	-239.3
OPER	359.7C	-319.4	319.4	-359.7C	320.6	-358.5	280.3	-398.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50			
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00		
OPER	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50			
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00		
OPER	2F1	82.40 L	63.39	232.50	0.0	0.00	0.00	0.00			
		-12.23 L	-9.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	108.59 L	83.53	228.50	0.0	0.00	0.00	0.00			
		-17.59 L	-13.53	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	113.33 L	87.18	228.50	0.0	0.00	0.00	0.00			
		-19.06 L	-14.66	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	105.12 L	80.86	226.50	0.0	0.00	0.00	0.00			
		-16.62 L	-12.79	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.50	11.46	1.31	12.75	HS 26.21	47.2
HS20	2.50	19.11	2.18	21.25	HS 43.68	78.6
2F1	3.89	29.32	3.40	32.61	0.00	51.0
3F1	2.95	20.38	2.58	22.67	0.00	59.4
4F1	2.83	18.82	2.47	20.93	0.00	66.8
5C1	3.05	21.57	2.67	23.99	0.00	106.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-78.2	80.7
OPER	172.1	-130.3	134.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.11	8.72	-13.16	6.71	-14.73	8.44	-11.33	6.49
OPER	HS20	-17.11	8.72	-13.16	6.71	-14.73	8.44	-11.33	6.49
OPER	2F1	-10.99	5.45	-8.45	4.19	0.00	0.00	0.00	0.00
OPER	3F1	-14.48	6.82	-11.14	5.25	0.00	0.00	0.00	0.00
OPER	4F1	-14.28	5.62	-10.98	4.32	0.00	0.00	0.00	0.00
OPER	5C1	-14.02	8.44	-10.78	6.49	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.57	9.25	HS 91.37	164.5
HS20	7.61	15.41	HS 152.28	274.1
2F1	11.86	24.66	0.00	177.9
3F1	9.00	19.70	0.00	207.0
4F1	9.13	23.93	0.00	246.5
5C1	9.30	15.93	0.00	371.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.8	215.0	-183.7	215.0	-183.7	175.9	-222.8	175.9	-
OPER 371.3	332.2	-332.2	332.2	-332.2	293.1	-371.3	293.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50	
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00
OPER	HS20	128.35 R	98.73	256.50	0.0	91.13	70.10	242.50	
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00
OPER	2F1	82.40 L	63.39	232.50	0.0	0.00	0.00	0.00	
		-12.23 L	-9.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	108.59 L	83.53	228.50	0.0	0.00	0.00	0.00	
		-17.59 L	-13.53	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	113.33 L	87.18	228.50	0.0	0.00	0.00	0.00	
		-19.06 L	-14.66	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	105.12 L	80.86	226.50	0.0	0.00	0.00	0.00	
		-16.62 L	-12.79	203.00	0.0	0.00	0.00	0.00	0.00

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	1.37	11.87	1.37	11.87	HS 27.40	49.3
HS20	2.28	19.79	2.28	19.79	HS 45.67	82.2
2F1	3.56	30.36	3.56	30.36	0.00	53.4
3F1	2.70	21.10	2.70	21.10	0.00	62.1
4F1	2.59	19.49	2.59	19.49	0.00	69.8

5C1	2.79	22.34	2.79	22.34	0.00	111.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 10.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.0	-210.4	172.9	-234.6
OPER	359.7C	-319.4	319.4	-359.7C	328.4	-350.7	288.1	-391.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00			
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00		
OPER	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00			
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00		
OPER	2F1	67.31 L	51.78	235.00	0.0	0.00	0.00	0.00			
		-8.15 L	-6.27	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	90.42 L	69.55	231.00	0.0	0.00	0.00	0.00			
		-11.73 L	-9.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	90.72 L	69.79	227.00	0.0	0.00	0.00	0.00			
		-12.70 L	-9.77	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	87.66 L	67.43	229.00	0.0	0.00	0.00	0.00			
		-11.08 L	-8.52	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	16.82	1.59	18.75	HS 31.76	57.2
HS20	3.02	28.04	2.65	31.25	HS 52.94	95.3
2F1	4.88	43.02	4.28	47.96	0.00	64.2
3F1	3.63	29.90	3.19	33.33	0.00	73.3
4F1	3.62	27.61	3.18	30.78	0.00	85.7
5C1	3.75	31.65	3.29	35.28	0.00	131.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.800	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-76.9	81.9
OPER	172.1	-128.2	136.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.77	5.87	-16.75	4.52	-17.86	5.76	-13.74	4.43
OPER	HS20	-21.77	5.87	-16.75	4.52	-17.86	5.76	-13.74	4.43
OPER	2F1	-13.46	3.67	-10.36	2.82	0.00	0.00	0.00	0.00
OPER	3F1	-18.08	3.75	-13.91	2.88	0.00	0.00	0.00	0.00
OPER	4F1	-18.14	3.09	-13.96	2.37	0.00	0.00	0.00	0.00
OPER	5C1	-17.53	5.68	-13.49	4.37	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.53	13.95	HS 70.67	127.2
HS20	5.89	23.25	HS 117.78	212.0
2F1	9.52	37.20	0.00	142.9
3F1	7.09	36.43	0.00	163.1
4F1	7.07	44.24	0.00	190.8
5C1	7.31	24.04	0.00	292.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 28.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.1	211.8	-186.8	211.8	-186.8	180.5	-218.1	180.5	-
OPER 363.5	332.2	-332.2	332.2	-332.2	300.9	-363.5	300.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00	
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00
OPER	HS20	108.85 R	83.73	259.00	0.0	71.41	54.93	245.00	
		-12.51 L	-9.62	192.00	0.0	-9.24	-7.11	215.00	0.00
OPER	2F1	67.31 L	51.78	235.00	0.0	0.00	0.00	0.00	
		-8.15 L	-6.27	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	90.42 L	69.55	231.00	0.0	0.00	0.00	0.00	
		-11.73 L	-9.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	90.72 L	69.79	227.00	0.0	0.00	0.00	0.00	
		-12.70 L	-9.77	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	87.66 L	67.43	229.00	0.0	0.00	0.00	0.00	
		-11.08 L	-8.52	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.66	17.43	1.66	17.43	HS 33.17	59.7
HS20	2.76	29.06	2.76	29.06	HS 55.29	99.5
2F1	4.47	44.58	4.47	44.58	0.00	67.1
3F1	3.33	30.99	3.33	30.99	0.00	76.5
4F1	3.32	28.61	3.32	28.61	0.00	89.5

5C1	3.43	32.80	3.43	32.80	0.00	137.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 10.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	204.8	-202.6	180.7	-226.8
OPER	359.7C	-319.4	319.4	-359.7C	341.4	-337.7	301.2	-378.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50			
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00		
OPER	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50			
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00		
OPER	2F1	40.11 L	30.86	237.50	0.0	0.00	0.00	0.00			
		-4.08 L	-3.14	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00			
		-5.86 L	-4.51	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	55.94 L	43.03	229.50	0.0	0.00	0.00	0.00			
		-6.35 L	-4.89	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	53.15 L	40.89	231.50	0.0	0.00	0.00	0.00			
		-5.54 L	-4.26	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.06	32.39	2.70	36.26	HS 54.01	97.2
HS20	5.10	53.99	4.50	60.43	HS 90.02	162.0
2F1	8.51	82.84	7.51	92.71	0.00	112.6
3F1	6.24	57.58	5.50	64.45	0.00	126.6
4F1	6.10	53.17	5.38	59.51	0.00	145.3
5C1	6.42	60.94	5.67	68.21	0.00	226.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-75.7	83.2
OPER	172.1	-126.1	138.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-26.76	2.95	-20.59	2.27	-21.20	3.16	-16.31	2.43
OPER	HS20	-26.76	2.95	-20.59	2.27	-21.20	3.16	-16.31	2.43
OPER	2F1	-16.05	1.85	-12.34	1.42	0.00	0.00	0.00	0.00
OPER	3F1	-21.89	2.35	-16.84	1.80	0.00	0.00	0.00	0.00
OPER	4F1	-22.38	2.53	-17.21	1.95	0.00	0.00	0.00	0.00
OPER	5C1	-21.26	3.69	-16.36	2.84	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.83	26.29	HS 56.55	101.8
HS20	4.71	43.82	HS 94.24	169.6
2F1	7.86	75.09	0.00	117.9
3F1	5.76	59.10	0.00	132.5
4F1	5.64	54.77	0.00	152.2
5C1	5.93	37.57	0.00	237.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01

Check Point I. D. 10.900

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6

Superimposed Dead Load Moment 16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 210.3	206.6	-192.0	206.6	-192.0	188.4	-210.3	188.4	-
OPER 350.5	332.2	-332.2	332.2	-332.2	313.9	-350.5	313.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50	
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00
OPER	HS20	66.91 R	51.47	261.50	0.0	41.79	32.15	247.50	
		-6.25 L	-4.81	192.00	0.0	-4.62	-3.55	215.00	0.00
OPER	2F1	40.11 L	30.86	237.50	0.0	0.00	0.00	0.00	
		-4.08 L	-3.14	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	54.73 L	42.10	233.50	0.0	0.00	0.00	0.00	
		-5.86 L	-4.51	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	55.94 L	43.03	229.50	0.0	0.00	0.00	0.00	
		-6.35 L	-4.89	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	53.15 L	40.89	231.50	0.0	0.00	0.00	0.00	
		-5.54 L	-4.26	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.82	33.62	2.82	33.62	HS 56.30	101.3
HS20	4.69	56.03	4.69	56.03	HS 93.84	168.9
2F1	7.83	85.97	7.83	85.97	0.00	117.4
3F1	5.74	59.76	5.74	59.76	0.00	131.9
4F1	5.61	55.18	5.61	55.18	0.00	151.5

5C1	5.91	63.25	5.91	63.25	0.00	236.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01
 Check Point I. D. 11.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

0.0 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	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	
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	
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	
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	
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	
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	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	fiber -bend	bottom fiber +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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S01	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-74.4	79.9
OPER	172.1	-124.0	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.36	-19.01	1.82
OPER	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.36	-19.01	1.82
OPER	2F1	-18.71	0.00	-14.39	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-25.85	0.00	-19.89	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.84	0.00	-20.64	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-25.16	0.00	-19.35	0.00	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.32	33.80	HS 46.48	83.7
HS20	3.87	56.33	HS 77.46	139.4
2F1	6.63	999.00	0.00	99.4
3F1	4.80	999.00	0.00	110.3
4F1	4.62	999.00	0.00	124.8
5C1	4.93	999.00	0.00	197.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S01 HS20 HS20
 Check Point I. D. 11.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.0 0.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load 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	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.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.272

Second Live Load Dist. Factor 1.272

Comments:

Member I. D. S02 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Span No.	Length Range No.	-- Non-Composite: Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	25.000	1	0		0.0	0.0
2	1	25.000	2	0		0.0	0.0
3	1	25.000	2	0		0.0	0.0
4	1	25.000	2	0		0.0	0.0
5	1	25.000	2	0		0.0	0.0
6	1	25.000	2	0		0.0	0.0
7	1	25.000	2	0		0.0	0.0
8	1	25.000	2	0		0.0	0.0
9	1	25.000	2	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
1	W	0.000	615.0	615.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	615.0	615.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	615.0	615.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.0 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	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	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	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	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	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	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	fiber -bend	bottom fiber +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

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 Superimposed Dead Load
Shear (-) Shear (+) Shear

0.7

0.0

6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.6	75.3
OPER	172.1	-139.3	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	2F1	-1.81	20.82	-1.40	16.01	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	28.77	-2.01	22.13	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	29.87	-2.17	22.97	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	27.99	-1.77	21.53	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.32	2.11	HS 42.26	76.1
HS20	52.21	3.52	HS 70.43	126.8
2F1	76.74	6.03	0.00	90.4
3F1	53.34	4.36	0.00	100.3
4F1	49.44	4.20	0.00	113.4
5C1	60.60	4.48	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 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. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live 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.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00			
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00			
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00			
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00			
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.25	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	4.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-82.5	76.3
OPER	172.1	-137.5	127.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	2F1	-2.05	17.86	-1.58	13.74	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	24.36	-2.01	18.74	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	24.90	-2.17	19.16	0.00	0.00	0.00	0.00
OPER	5C1	-4.11	23.66	-3.16	18.20	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.44	2.56	HS 51.25	92.3
HS20	39.06	4.27	HS 85.42	153.8
2F1	66.95	7.12	0.00	106.9
3F1	52.68	5.22	0.00	120.1
4F1	48.82	5.11	0.00	137.9
5C1	33.50	5.38	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00	
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00	
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00	
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00	
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1	5.36	56.32	5.36	56.32	0.00	214.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00			
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00			
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00			
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00			
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.65	14.88	1.45	16.62	HS	52.3
HS20	2.76	24.80	2.42	27.69	HS	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.4	0.0	3.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.5	77.4
OPER	172.1	-135.8	128.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	2F1	-4.08	14.98	-3.14	11.52	0.00	0.00	0.00	0.00
OPER	3F1	-4.17	20.12	-3.21	15.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.43	20.19	-2.64	15.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	19.51	-4.86	15.01	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.47	3.19	HS 63.86	114.9
HS20	20.78	5.32	HS 106.43	191.6
2F1	33.25	8.61	0.00	129.1
3F1	32.57	6.41	0.00	147.3
4F1	39.55	6.39	0.00	172.4
5C1	21.49	6.61	0.00	264.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02 HS20 HS20
Check Point I. D. 1.200 2F1
3F1
4F1
5C1

Dead Load Moment 2.8 Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00	
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00	
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00	
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00	
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00			
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00			
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00			
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00			
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00	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	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.5	78.4
OPER	172.1	-134.1	130.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	2F1	-6.07	12.23	-4.67	9.41	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	16.11	-5.84	12.39	0.00	0.00	0.00	0.00
OPER	4F1	-6.25	15.89	-4.81	12.22	0.00	0.00	0.00	0.00
OPER	5C1	-9.40	15.60	-7.23	12.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.29	4.12	HS 82.32	148.2
HS20	13.82	6.86	HS 137.20	247.0
2F1	22.11	10.69	0.00	160.3
3F1	17.66	8.11	0.00	186.5
4F1	21.45	8.22	0.00	222.0
5C1	14.27	8.38	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00	
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00	
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00	
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00	
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00			
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00			
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00			
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00			
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	2F1	-7.97	9.63	-6.13	7.41	0.00	0.00	0.00	0.00
OPER	3F1	-10.92	12.38	-8.40	9.53	0.00	0.00	0.00	0.00
OPER	4F1	-10.15	11.80	-7.81	9.08	0.00	0.00	0.00	0.00
OPER	5C1	-12.27	12.15	-9.44	9.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.22	5.55	HS 110.98	199.8
HS20	10.38	9.25	HS 184.96	332.9
2F1	16.60	13.74	0.00	206.1
3F1	12.12	10.69	0.00	245.9
4F1	13.05	11.22	0.00	302.9
5C1	10.79	10.89	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load w/o imp.	Moment Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load w/o imp.	Moment Loc. of Conc. Load 1	Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00	
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00	
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00	
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00	
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.5 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00			
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00			
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00			
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00			
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00	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	1.46	6.06	1.28	6.76	HS 25.52	45.9
HS20	2.42	10.11	2.13	11.26	HS 42.53	76.6
2F1	3.55	15.51	3.11	17.28	0.00	46.7
3F1	2.60	10.78	2.28	12.01	0.00	52.5
4F1	2.45	9.95	2.14	11.09	0.00	57.9
5C1	2.73	11.41	2.39	12.72	0.00	95.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.2	-1.6	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.7	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	2F1	-10.81	7.23	-8.32	5.56	0.00	0.00	0.00	0.00
OPER	3F1	-14.12	9.00	-10.86	6.92	0.00	0.00	0.00	0.00
OPER	4F1	-14.21	8.23	-10.93	6.33	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.33	-11.52	7.18	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.68	7.45	HS 93.51	168.3
HS20	7.79	12.42	HS 155.86	280.5
2F1	12.08	18.55	0.00	181.2
3F1	9.25	14.90	0.00	212.8
4F1	9.20	16.29	0.00	248.3
5C1	8.73	14.37	0.00	349.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00	
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00	
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00	
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00	
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00			
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00			
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00			
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00			
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.3	81.6
OPER	172.1	-128.8	135.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	2F1	-13.52	5.06	-10.40	3.89	0.00	0.00	0.00	0.00
OPER	3F1	-17.64	6.00	-13.57	4.62	0.00	0.00	0.00	0.00
OPER	4F1	-18.09	5.13	-13.92	3.94	0.00	0.00	0.00	0.00
OPER	5C1	-17.52	6.97	-13.48	5.36	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.82	10.86	HS 76.34	137.4
HS20	6.36	18.10	HS 127.23	229.0
2F1	9.53	26.87	0.00	142.9
3F1	7.30	22.64	0.00	167.9
4F1	7.12	26.51	0.00	192.2
5C1	7.35	19.49	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 2.8 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00			
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00			
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00			
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.5	-4.7	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.6
OPER	172.1	-127.1	137.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	2F1	-16.05	3.16	-12.35	2.43	0.00	0.00	0.00	0.00
OPER	3F1	-21.68	3.43	-16.68	2.64	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.52	-17.06	1.94	0.00	0.00	0.00	0.00
OPER	5C1	-20.67	4.78	-15.90	3.68	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.94	16.00	HS 58.80	105.8
HS20	4.90	26.67	HS 98.00	176.4
2F1	7.92	43.52	0.00	118.7
3F1	5.86	40.11	0.00	134.8
4F1	5.73	54.68	0.00	154.7
5C1	6.15	28.80	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00	
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00	
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00	
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.72	4.27	1.72	4.27	HS 34.42	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1	3.52	8.03	3.52	8.03	0.00	140.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment 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.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00			
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00			
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00			
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00			
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-75.2	83.6
OPER	172.1	-125.4	139.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	2F1	-18.38	1.56	-14.14	1.20	0.00	0.00	0.00	0.00
OPER	3F1	-25.44	1.30	-19.57	1.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.13	0.75	-20.10	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-24.15	2.80	-18.58	2.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.40	26.56	HS 47.91	86.2
HS20	3.99	44.27	HS 79.85	143.7
2F1	6.82	89.07	0.00	102.3
3F1	4.93	107.27	0.00	113.3
4F1	4.80	184.65	0.00	129.6
5C1	5.19	49.75	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00	
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00	
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00	
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00	
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1	5.11	6.72	5.11	6.72	0.00	204.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	35.20	35.20	2.861
			999999.000
			99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00			
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00			
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00			
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	8.68	2.60	7.76	2.95	HS 51.97	93.5
HS20	14.47	4.33	12.94	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.85	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	1.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-74.2	84.7
OPER	172.1	-123.6	141.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	2F1	-20.47	0.49	-15.74	0.37	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	0.70	-22.21	0.54	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	0.75	-23.39	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	1.11	-21.09	0.85	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.04	56.69	HS 40.77	73.4
HS20	3.40	94.49	HS 67.94	122.3
2F1	6.04	290.18	0.00	90.6
3F1	4.28	201.70	0.00	98.5
4F1	4.07	186.92	0.00	109.8
5C1	4.51	126.98	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 1.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.0 -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00	
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00	
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00	
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.05	2.71	8.05	2.71	HS 54.19	97.5
HS20	13.42	4.52	13.42	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1	10.77	5.39	10.77	5.39	0.00	215.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	35.20	35.20	2.861
			999999.000
			99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.10	1.16	10.07	1.33	HS 23.26	41.9
HS20	18.50	1.94	16.79	2.21	HS 38.76	69.8
2F1	28.39	4.49	25.76	5.13	0.00	67.3
3F1	19.73	3.00	17.90	3.42	0.00	68.9
4F1	18.22	2.49	16.53	2.84	0.00	67.1
5C1	23.83	2.74	21.62	3.13	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	2F1	-20.47	21.85	-15.74	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	30.77	-22.21	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	32.52	-23.39	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	29.85	-21.09	22.96	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.131

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.10	1.16	10.07	1.33	HS	23.26
HS20	18.50	1.94	16.79	2.21	HS	38.76
2F1	28.39	4.49	25.76	5.13		0.00
3F1	19.73	3.00	17.90	3.42		0.00
4F1	18.22	2.49	16.53	2.84		0.00
5C1	23.83	2.74	21.62	3.13		0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-9.4	8.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	2F1	-22.27	21.85	-17.13	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-31.91	30.77	-24.55	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-34.28	32.52	-26.37	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-30.41	29.85	-23.39	22.96	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.79	1.66	HS 33.12	59.6
HS20	2.98	2.76	HS 55.21	99.4
2F1	5.47	4.91	0.00	73.7
3F1	3.82	3.49	0.00	80.3
4F1	3.56	3.30	0.00	89.2
5C1	4.01	3.60	0.00	143.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.42	1.22	10.42	1.22	HS 24.37	43.9
HS20	17.36	2.03	17.36	2.03	HS 40.62	73.1
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	0.00		
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	0.00		
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	0.00		
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	0.00		
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	8.15	1.94	7.34	2.19	HS 38.82	69.9
HS20	13.58	3.23	12.24	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.7	0.0	6.6
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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	109.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	2F1	-2.27	19.49	-1.74	14.99	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	27.06	-2.51	20.81	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	28.06	-2.71	21.59	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	26.19	-2.71	20.15	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.26	1.94	HS 38.87	70.0
HS20	37.10	3.24	HS 64.78	116.6
2F1	54.55	5.60	0.00	84.0
3F1	37.92	4.03	0.00	92.7
4F1	35.14	3.89	0.00	104.9
5C1	35.13	4.16	0.00	166.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.6 -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.61	2.03	7.61	2.03	HS 40.53	73.0
HS20	12.69	3.38	12.69	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00			
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00			
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00			
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00			
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.87	0.00	209.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	5.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-122.0	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	2F1	-2.27	17.02	-1.74	13.09	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	23.17	-2.51	17.82	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	23.81	-2.71	18.32	0.00	0.00	0.00	0.00
OPER	5C1	-5.27	22.39	-4.06	17.22	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.69	2.34	HS 46.80	84.2
HS20	26.15	3.90	HS 77.99	140.4
2F1	53.80	6.51	0.00	97.6
3F1	37.40	4.78	0.00	109.9
4F1	34.66	4.65	0.00	125.6
5C1	23.13	4.95	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.0 -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00	
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00	
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00	
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00	
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1	5.56	5.44	5.56	5.44	0.00	217.6
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 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	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00			
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00			
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00			
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.4	0.0	3.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	2F1	-3.98	14.36	-3.06	11.04	0.00	0.00	0.00	0.00
OPER	3F1	-4.27	19.12	-3.28	14.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	19.55	-2.71	15.04	0.00	0.00	0.00	0.00
OPER	5C1	-7.32	18.72	-5.63	14.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.04	2.93	HS 58.69	105.6
HS20	16.74	4.89	HS 97.81	176.1
2F1	30.24	7.83	0.00	117.5
3F1	28.18	5.88	0.00	135.3
4F1	34.18	5.75	0.00	155.3
5C1	16.43	6.01	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00			
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00			
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00			
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	2.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	2F1	-6.29	11.62	-4.84	8.94	0.00	0.00	0.00	0.00
OPER	3F1	-7.48	15.07	-5.75	11.59	0.00	0.00	0.00	0.00
OPER	4F1	-6.33	15.06	-4.87	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.64	15.88	-7.41	12.22	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.08	3.62	HS 72.45	130.4
HS20	11.81	6.04	HS 120.75	217.4
2F1	18.86	9.82	0.00	147.4
3F1	15.86	7.58	0.00	174.2
4F1	18.75	7.58	0.00	204.7
5C1	12.31	7.19	0.00	287.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00	
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00	
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 2.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.2 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	2F1	74.76	R	57.51	47.50	0.0	0.00	0.00	0.00		
		-18.29	L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	L	76.84	27.50	0.0	0.00	0.00	0.00		
		-26.30	L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	R	80.26	51.50	0.0	0.00	0.00	0.00		
		-28.44	L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	R	73.34	88.50	0.0	0.00	0.00	0.00		
		-38.29	L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.63	5.60	1.45	6.24
HS20	2.72	9.34	2.41	10.39
2F1	3.82	15.51	3.39	17.26
3F1	2.86	10.79	2.54	12.00
4F1	2.74	9.98	2.43	11.10
5C1	2.99	7.41	2.66	8.24

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	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	0.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.1	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	2F1	-8.83	8.91	-6.80	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-11.07	11.18	-8.52	8.60	0.00	0.00	0.00	0.00
OPER	4F1	-10.32	10.46	-7.94	8.04	0.00	0.00	0.00	0.00
OPER	5C1	-12.17	12.98	-9.36	9.99	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.82	4.70	HS 93.99	169.2
HS20	8.03	7.83	HS 156.65	282.0
2F1	13.23	13.00	0.00	194.9
3F1	10.56	10.36	0.00	238.3
4F1	11.32	11.08	0.00	299.2
5C1	9.61	8.92	0.00	357.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	2F1	74.76 R	57.51	47.50	0.0	0.00	0.00	0.00	
		-18.29 L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 L	76.84	27.50	0.0	0.00	0.00	0.00	
		-26.30 L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 R	80.26	51.50	0.0	0.00	0.00	0.00	
		-28.44 L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 R	73.34	88.50	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00			
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00			
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00			
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00			
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS	28.53
HS20	2.68	8.43	2.38	9.38	HS	47.54
2F1	3.89	12.93	3.46	14.40		51.9
3F1	3.04	8.99	2.70	10.01		62.2
4F1	2.84	8.30	2.52	9.24		68.0
5C1	3.08	7.44	2.73	8.28		109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.1	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	2F1	-11.53	6.35	-8.87	4.89	0.00	0.00	0.00	0.00
OPER	3F1	-14.95	7.59	-11.50	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-14.93	6.49	-11.48	4.99	0.00	0.00	0.00	0.00
OPER	5C1	-14.92	10.51	-11.48	8.09	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.70	6.75	HS 74.08	133.4
HS20	6.17	11.24	HS 123.47	222.3
2F1	9.98	18.52	0.00	149.7
3F1	7.70	15.50	0.00	177.0
4F1	7.71	18.12	0.00	208.2
5C1	7.71	11.19	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00	
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00	
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00	
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00	
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.7
 Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00			
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00			
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00			
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00			
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.83	3.94	1.63	4.39	HS	58.6
HS20	3.05	6.57	2.71	7.32	HS	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.0	71.6
OPER	151.3	-113.4	119.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	2F1	-14.27	4.03	-10.98	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.99	4.39	-14.61	3.38	0.00	0.00	0.00	0.00
OPER	4F1	-19.42	3.93	-14.94	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-18.31	8.12	-14.09	6.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.98	9.43	HS 59.62	107.3
HS20	4.97	15.72	HS 99.36	178.9
2F1	7.95	29.58	0.00	119.2
3F1	5.97	27.18	0.00	137.3
4F1	5.84	30.41	0.00	157.6
5C1	6.19	14.70	0.00	247.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.7 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00	
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00	
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00	
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00	
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00			
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00			
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.0	72.6
OPER	151.3	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	2F1	-16.94	2.53	-13.03	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-23.05	3.64	-17.73	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-23.67	3.93	-18.20	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-21.87	5.87	-16.82	4.52	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	14.38	HS 47.54	85.6
HS20	3.96	23.97	HS 79.23	142.6
2F1	6.59	47.78	0.00	98.9
3F1	4.84	33.22	0.00	111.4
4F1	4.72	30.84	0.00	127.4
5C1	5.11	20.61	0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00	
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00	
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00			
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00			
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00			
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00			
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.68	2.32	6.00	2.61	HS 46.38	83.5
HS20	11.14	3.87	10.01	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	2.900		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	73.6
OPER	151.3	-110.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	2F1	-19.43	2.53	-14.95	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	3.64	-20.74	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	3.94	-21.49	3.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	3.90	-19.58	3.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.97	17.50	HS 39.46	71.0
HS20	3.29	29.16	HS 65.77	118.4
2F1	5.66	48.44	0.00	84.9
3F1	4.08	33.68	0.00	93.9
4F1	3.94	31.15	0.00	106.3
5C1	4.32	31.51	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 2.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.23	2.42	6.23	2.42	HS 48.34	87.0
HS20	10.39	4.03	10.39	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1	9.37	5.08	9.37	5.08	0.00	203.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -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	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	2F1	-19.43	21.64	-14.95	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	30.57	-20.74	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	32.33	-21.49	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	28.84	-19.58	22.18	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.3	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	2F1	-21.63	21.64	-16.64	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.54	30.57	-23.49	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-32.28	32.33	-24.83	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.86	28.84	-22.20	22.18	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.82	2.81	HS 56.20	101.2
2F1	5.01	4.99	0.00	74.8
3F1	3.55	3.53	0.00	81.2
4F1	3.36	3.34	0.00	90.2
5C1	3.75	3.74	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.00	2.96	15.00	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00			
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00			
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00			
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00			
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.53	2.34	5.87	2.63	HS 46.78	84.2
HS20	10.89	3.90	9.78	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.6	0.0	6.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	2F1	-2.26	19.45	-1.74	14.97	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.47	-2.71	19.59	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.56	1.96	HS 39.26	70.7
HS20	34.26	3.27	HS 65.44	117.8
2F1	54.57	5.64	0.00	84.5
3F1	37.93	4.06	0.00	93.4
4F1	35.15	3.92	0.00	105.7
5C1	34.94	4.31	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00	
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00	
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00	
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00	
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.09	2.44	6.09	2.44	HS 48.76	87.8
HS20	10.15	4.06	10.15	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.5

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	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50		
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	0.00		
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	0.00		
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	0.00		
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	0.00		
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.85	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	4.6
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.8
OPER	151.3	-121.4	111.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	2F1	-2.26	16.97	-1.74	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.78	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.72	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.65	2.36	HS 47.27	85.1
HS20	24.41	3.94	HS 78.78	141.8
2F1	53.82	6.56	0.00	98.4
3F1	37.41	4.82	0.00	110.8
4F1	34.67	4.70	0.00	126.8
5C1	22.95	5.08	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1	4.54	6.28	4.54	6.28	0.00	181.6
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.0 10.0

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	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00			
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00			
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00			
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00			
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	2F1	-4.01	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.06	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.57	2.96	HS 59.26	106.7
HS20	15.95	4.94	HS 98.76	177.8
2F1	29.82	7.90	0.00	118.5
3F1	27.39	5.93	0.00	136.4
4F1	34.18	5.80	0.00	156.7
5C1	16.27	6.16	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.0 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1	3.31	7.21	3.31	7.21	0.00	132.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.6 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00			
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00			
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00			
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00			
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.8	68.8
OPER	151.3	-118.0	114.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	2F1	-6.32	11.58	-4.86	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	15.00	-4.97	11.54	0.00	0.00	0.00	0.00
OPER	5C1	-9.68	14.97	-7.45	11.51	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.83	3.69	HS 73.75	132.8
HS20	11.38	6.15	HS 122.92	221.3
2F1	18.67	9.91	0.00	148.6
3F1	15.63	7.64	0.00	175.8
4F1	18.26	7.65	0.00	206.5
5C1	12.19	7.66	0.00	306.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00	
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00	
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00	
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00	
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35	R	81.04	76.50	0.0	91.75	70.58	62.50		
		-24.96	R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00	
OPER	HS20	105.35	R	81.04	76.50	0.0	91.75	70.58	62.50		
		-24.96	R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00	
OPER	2F1	75.01	R	57.70	72.50	0.0	0.00	0.00	0.00		
		-16.27	R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.30	L	77.16	52.50	0.0	0.00	0.00	0.00		
		-23.40	R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.77	L	80.59	48.50	0.0	0.00	0.00	0.00		
		-25.34	R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	96.04	L	73.88	11.50	0.0	0.00	0.00	0.00		
		-36.40	R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	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. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	2F1	-8.87	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.14	-8.56	8.57	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-7.99	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.19	-9.40	9.37	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.58	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.4
4F1	11.19	11.20	0.00	302.3
5C1	9.52	9.56	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00	
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00	
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.5 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00			
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00			
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.09	1.40	5.66	HS 28.01	50.4
HS20	2.63	8.49	2.33	9.44	HS 46.69	84.0
2F1	3.85	13.02	3.41	14.49	0.00	51.2
3F1	3.01	9.05	2.67	10.07	0.00	61.3
4F1	2.80	8.36	2.49	9.30	0.00	67.1
5C1	3.04	7.58	2.70	8.43	0.00	107.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	2F1	-11.57	6.33	-8.90	4.87	0.00	0.00	0.00	0.00
OPER	3F1	-15.00	7.56	-11.54	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.66	-11.51	7.43	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.90	HS 73.59	132.5
HS20	6.13	11.50	HS 122.64	220.8
2F1	9.89	18.69	0.00	148.4
3F1	7.63	15.65	0.00	175.5
4F1	7.64	18.29	0.00	206.2
5C1	7.65	12.24	0.00	306.0

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02 HS20 HS20
Check Point I. D. 3.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.5 Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	+bend	bottom fi
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 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	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00	
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00	
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1	2.81	7.86	2.81	7.86	0.00	112.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 9.0

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	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.65	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.48	-14.98	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.34	-14.12	5.65	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.70	HS 59.15	106.5
HS20	4.93	16.17	HS 98.58	177.4
2F1	7.88	29.86	0.00	118.3
3F1	5.92	27.43	0.00	136.2
4F1	5.79	34.43	0.00	156.4
5C1	6.14	16.34	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.9 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.5	-4.8	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	73.0
OPER	151.3	-111.1	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	2F1	-16.97	2.24	-13.05	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.23	-17.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.48	-18.24	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.28	-16.86	4.06	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.94	HS 47.18	84.9
HS20	3.93	24.90	HS 78.63	141.5
2F1	6.55	54.20	0.00	98.2
3F1	4.81	37.68	0.00	110.6
4F1	4.69	34.92	0.00	126.5
5C1	5.07	23.06	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00			
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.82	2.31	6.13	2.60	HS 46.10	83.0
HS20	11.37	3.84	10.22	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	3.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	2F1	-19.45	2.24	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.23	-20.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	3.50	-21.53	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.51	-19.61	2.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	21.21	HS 39.18	70.5
HS20	3.27	35.35	HS 65.30	117.5
2F1	5.62	54.96	0.00	84.4
3F1	4.05	38.20	0.00	93.2
4F1	3.91	35.27	0.00	105.5
5C1	4.29	35.16	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 3.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00	
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.36	2.40	6.36	2.40	HS 48.06	86.5
HS20	10.60	4.01	10.60	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.05	1.27	10.00	1.45
HS20	18.42	2.12	16.67	2.41
2F1	28.26	5.23	25.57	5.95
3F1	19.64	3.31	17.78	3.76
4F1	18.14	2.80	16.41	3.18
5C1	23.72	3.51	21.47	3.99
HS	25.46			45.8
HS	42.43			76.4
	0.00			78.5
	0.00			76.1
	0.00			75.5
	0.00			140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.90	-19.61	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00		65.00	
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00		0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00		0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00		0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00		0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.9	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.32	32.33	-24.86	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.90	-22.22	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.80	2.81	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.52	3.53	0.00	81.1
4F1	3.33	3.34	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-1.6 -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	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00		87.50	
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00		87.50	
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00		0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00		0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00		0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00		0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.74	2.30	6.06	2.60	HS 46.08	82.9
HS20	11.24	3.84	10.10	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.50	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.82	1.96	HS 39.21	70.6
HS20	34.69	3.27	HS 65.35	117.6
2F1	54.66	5.63	0.00	84.4
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	35.00	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.29	2.40	6.29	2.40	HS 48.04	86.5
HS20	10.48	4.00	10.48	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00			
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00			
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00			
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00			
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.52	HS 49.05	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.75	147.1
2F1	7.08	8.05	6.33	9.01	0.00	94.9
3F1	5.80	5.59	5.19	6.26	0.00	119.3
4F1	6.30	5.17	5.63	5.78	0.00	139.5
5C1	5.00	5.96	4.47	6.67	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	4.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.77	2.36	HS 47.21	85.0
HS20	24.62	3.93	HS 78.68	141.6
2F1	53.91	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.73	4.69	0.00	126.6
5C1	22.98	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.5

Rating Veh. ber	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	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00	
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00	
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00	
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00	
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 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	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00			
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.9	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.96	HS 59.18	106.5
HS20	16.05	4.93	HS 98.64	177.5
2F1	29.85	7.89	0.00	118.3
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.29	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00	
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00			
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.08	1.41	5.65	HS 28.11	50.6
HS20	2.64	8.46	2.34	9.41	HS 46.85	84.3
2F1	3.86	12.99	3.43	14.45	0.00	51.4
3F1	3.02	9.03	2.68	10.04	0.00	61.6
4F1	2.81	8.34	2.49	9.27	0.00	67.4
5C1	3.05	7.55	2.71	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.64	132.5
HS20	11.44	6.14	HS 122.73	220.9
2F1	18.69	9.90	0.00	148.5
3F1	15.64	7.63	0.00	175.6
4F1	18.28	7.64	0.00	206.3
5C1	12.20	7.65	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00	
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.5

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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	R	81.05	101.50	0.0	91.50	70.38	87.50		
		-24.97	R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00	
OPER	HS20	105.37	R	81.05	101.50	0.0	91.50	70.38	87.50		
		-24.97	R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00	
OPER	2F1	75.03	R	57.71	97.50	0.0	0.00	0.00	0.00		
		-16.27	R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.33	L	77.18	77.50	0.0	0.00	0.00	0.00		
		-23.41	R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.80	L	80.62	73.50	0.0	0.00	0.00	0.00		
		-25.35	R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.71	R	73.62	138.50	0.0	0.00	0.00	0.00		
		-36.46	R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.57	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.53	172.0
HS20	7.97	7.96	HS 159.22	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.0
5C1	9.53	9.51	0.00	380.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.74	2.49	11.74	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	2F1	-11.57	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.84	HS 73.68	132.6
HS20	6.14	11.40	HS 122.80	221.0
2F1	9.90	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.7
4F1	7.65	18.27	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.8	71.9
OPER	151.3	-113.0	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.59	HS 59.22	106.6
HS20	4.93	15.99	HS 98.70	177.7
2F1	7.89	29.83	0.00	118.4
3F1	5.93	27.41	0.00	136.4
4F1	5.80	34.24	0.00	156.6
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.5	-4.7	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.8	72.9
OPER	151.3	-111.3	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.69	HS 47.24	85.0
HS20	3.94	24.48	HS 78.73	141.7
2F1	6.56	53.90	0.00	98.3
3F1	4.82	37.46	0.00	110.8
4F1	4.69	34.72	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00			87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00			87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	6.76	2.31	6.07	46.18	83.1
HS20	11.26	3.85	10.12	76.97	138.6
2F1	21.10	6.51	18.97	0.00	97.6
3F1	21.16	4.52	19.03	0.00	104.0
4F1	19.82	4.18	17.82	0.00	112.8
5C1	10.10	4.85	9.08	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.53	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.67	HS 39.23	70.6
HS20	3.27	34.44	HS 65.39	117.7
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.07	0.00	105.7
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 4.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 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	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.30	2.41	6.30	2.41	HS 48.15	86.7
HS20	10.51	4.01	10.51	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.899

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00		
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00		
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.66	3.53	21.41	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.17	3.69	22.17	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.64	2.31	5.97	2.60	HS 46.19	83.2
HS20	11.07	3.85	9.95	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.6	0.0	6.2
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.68	1.96	HS 39.22	70.6
HS20	34.47	3.27	HS 65.37	117.7
2F1	54.64	5.63	0.00	84.5
3F1	37.98	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.20	2.41	6.20	2.41	HS 48.16	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment 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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D.

HAM500

Member I. D.

S02

Check Point I. D.

5.200

HS20 HS20

2F1

3F1

4F1

5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.5

0.0

4.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	Available Capacity for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.70	2.36	HS 47.23	85.0
HS20	24.50	3.94	HS 78.71	141.7
2F1	53.89	6.55	0.00	98.3
3F1	37.46	4.81	0.00	110.7
4F1	34.71	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	2.96	HS 59.21	106.6
HS20	16.00	4.93	HS 98.68	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.3
4F1	34.23	5.80	0.00	156.5
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.92		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	0.00		
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	0.00		
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	0.00		
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	0.00		
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.63	8.47	2.34	9.42	HS 46.78	84.2
2F1	3.85	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.04	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.66	132.6
HS20	11.41	6.14	HS 122.77	221.0
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.7
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.893

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 5.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.8

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	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.96	HS 159.28	286.7
2F1	13.11	13.10	0.00	196.6
3F1	10.46	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1	2.73	8.17	2.73	8.17	0.00	109.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00			0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00			0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00			0.00
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00			0.00
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00			0.00
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00			0.00
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.65	132.6
HS20	6.14	11.42	HS 122.75	220.9
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.2

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02 HS20 HS20
Check Point I. D. 5.600 2F1
3F1
4F1
5C1

Dead Load Moment 1.4 Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.61	HS 59.19	106.6
HS20	4.93	16.02	HS 98.66	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.28	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.800

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			185.00
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00			
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			185.00
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00			
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00			0.00
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00			
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00			0.00
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00			
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00			0.00
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00			
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00			0.00
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.61	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.73	HS 47.22	85.0
HS20	3.93	24.55	HS 78.70	141.7
2F1	6.55	53.90	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.97	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.77	2.31	6.09	2.60	HS 46.15	83.1
HS20	11.29	3.85	10.15	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.74	HS 39.22	70.6
HS20	3.27	34.56	HS 65.36	117.6
2F1	5.63	54.65	0.00	84.5
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	34.99	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 5.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.32	2.41	6.32	2.41	HS 48.12	86.6
HS20	10.53	4.01	10.53	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1	9.43	5.06	9.43	5.06	0.00	202.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -32.2

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	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00			
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00			
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00			
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	0.00		
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 6.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -32.2

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	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00			
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00			
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00			
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	0.00		
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	10.90	1.28	9.87	1.45	HS 25.51	45.9
HS20	18.18	2.13	16.45	2.42	HS 42.52	76.5
2F1	28.22	5.25	25.53	5.97	0.00	78.7
3F1	19.61	3.32	17.75	3.77	0.00	76.2
4F1	18.11	2.80	16.39	3.19	0.00	75.7
5C1	23.68	3.52	21.43	4.00	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.13	101.0
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.53	0.00	81.1
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.22	1.34	10.22	1.34	HS 26.69	48.0
HS20	17.03	2.22	17.03	2.22	HS 44.48	80.1
2F1	26.43	5.49	26.43	5.49	0.00	82.3
3F1	18.37	3.47	18.37	3.47	0.00	79.8
4F1	16.97	2.93	16.97	2.93	0.00	79.2

5C1	22.19	3.68	22.19	3.68	0.00	147.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.66	2.31	5.99	2.60	HS 46.15	83.1
HS20	11.10	3.85	9.98	4.33	HS 76.92	138.5
2F1	21.11	6.50	18.98	7.33	0.00	97.5
3F1	21.17	4.52	19.04	5.09	0.00	104.0
4F1	19.83	4.17	17.83	4.70	0.00	112.7
5C1	10.11	4.85	9.09	5.47	0.00	194.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.74	1.96	HS 39.22	70.6
HS20	34.56	3.27	HS 65.36	117.6
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.21	3.91	0.00	105.6
5C1	34.99	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.21	2.41	6.21	2.41	HS 48.12	86.6
HS20	10.36	4.01	10.36	4.01	HS 80.20	144.4
2F1	19.70	6.78	19.70	6.78	0.00	101.7
3F1	19.76	4.71	19.76	4.71	0.00	108.4
4F1	18.50	4.35	18.50	4.35	0.00	117.5

5C1	9.43	5.06	9.43	5.06	0.00	202.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	4.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.73	2.36	HS 47.22	85.0
HS20	24.55	3.93	HS 78.70	141.7
2F1	53.90	6.55	0.00	98.3
3F1	37.47	4.81	0.00	110.7
4F1	34.72	4.69	0.00	126.6
5C1	22.97	5.07	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.84	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.22	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.61	2.96	HS 59.19	106.6
HS20	16.02	4.93	HS 98.66	177.6
2F1	29.84	7.89	0.00	118.4
3F1	27.42	5.93	0.00	136.3
4F1	34.24	5.80	0.00	156.5
5C1	16.28	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.08	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.980

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.29		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00		0.00	
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00		0.00	
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00		0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00		0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00		0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00		0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.08	1.40	5.65	HS 28.07	50.5
HS20	2.64	8.47	2.34	9.42	HS 46.79	84.2
2F1	3.86	13.00	3.42	14.46	0.00	51.3
3F1	3.01	9.03	2.67	10.05	0.00	61.5
4F1	2.81	8.34	2.49	9.28	0.00	67.3
5C1	3.04	7.56	2.70	8.41	0.00	108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.65	132.6
HS20	11.42	6.14	HS 122.75	220.9
2F1	18.68	9.90	0.00	148.5
3F1	15.64	7.64	0.00	175.6
4F1	18.28	7.64	0.00	206.4
5C1	12.19	7.66	0.00	306.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.27	1.46	5.27	HS 29.27	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.78	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.8

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	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	L	81.05	123.50	0.0	91.64	70.49	137.50		
		-24.97	L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00	
OPER	HS20	105.37	L	81.05	123.50	0.0	91.64	70.49	137.50		
		-24.97	L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00	
OPER	2F1	75.03	L	57.71	127.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.34	R	77.18	147.50	0.0	0.00	0.00	0.00		
		-23.41	L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.80	R	80.62	151.50	0.0	0.00	0.00	0.00		
		-25.35	L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.71	L	73.62	86.50	0.0	0.00	0.00	0.00		
		-36.46	L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	6.81	1.42	7.57	HS 28.50	51.3
HS20	2.68	11.35	2.38	12.61	HS 47.50	85.5
2F1	3.76	17.64	3.34	19.61	0.00	50.0
3F1	2.81	12.26	2.49	13.63	0.00	57.4
4F1	2.69	11.32	2.39	12.58	0.00	64.5
5C1	2.95	7.87	2.62	8.75	0.00	104.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.55	172.0
HS20	7.97	7.96	HS 159.25	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	7.06	1.49	7.06	HS 29.72	53.5
HS20	2.48	11.77	2.48	11.77	HS 49.54	89.2
2F1	3.48	18.30	3.48	18.30	0.00	52.2
3F1	2.60	12.72	2.60	12.72	0.00	59.8
4F1	2.49	11.75	2.49	11.75	0.00	67.2

5C1	2.73	8.17	2.73	8.17	0.00	109.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.08	1.40	5.65	HS	28.07
HS20	2.63	8.47	2.34	9.42	HS	46.78
2F1	3.85	13.00	3.42	14.46		51.3
3F1	3.01	9.04	2.67	10.05		61.5
4F1	2.81	8.34	2.49	9.28		67.3
5C1	3.04	7.56	2.70	8.41		108.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.66	132.6
HS20	6.14	11.41	HS 122.77	221.0
2F1	9.90	18.68	0.00	148.5
3F1	7.64	15.64	0.00	175.7
4F1	7.64	18.28	0.00	206.4
5C1	7.66	12.19	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.28	1.46	5.28	HS 29.26	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.77	87.8
2F1	3.57	13.49	3.57	13.49	0.00	53.5
3F1	2.79	9.38	2.79	9.38	0.00	64.1
4F1	2.60	8.66	2.60	8.66	0.00	70.1

5C1	2.82	7.84	2.82	7.84	0.00	112.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.9 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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.62	4.41	HS 32.29	58.1
HS20	3.02	6.59	2.69	7.34	HS 53.82	96.9
2F1	4.63	10.10	4.12	11.27	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.49	3.16	7.23	0.00	85.2
5C1	3.61	6.88	3.21	7.67	0.00	128.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.8	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.60	HS 59.21	106.6
HS20	4.93	16.00	HS 98.68	177.6
2F1	7.89	29.84	0.00	118.4
3F1	5.93	27.41	0.00	136.3
4F1	5.80	34.23	0.00	156.5
5C1	6.15	16.28	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.63	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.05	100.9
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.30	3.38	7.30	0.00	77.7
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment 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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.93	88.1
HS20	4.56	5.26	4.08	5.88	HS 81.55	146.8
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.18	6.28	0.00	119.0
4F1	6.29	5.18	5.62	5.80	0.00	139.8
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.70	HS 47.23	85.0
HS20	3.94	24.50	HS 78.71	141.7
2F1	6.55	53.89	0.00	98.3
3F1	4.81	37.46	0.00	110.7
4F1	4.69	34.71	0.00	126.7
5C1	5.07	22.97	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -0.9

Rating Veh. ber	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 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	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.88	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.80	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.4

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.75	2.31	6.07	2.60	HS 46.20	83.2
HS20	11.26	3.85	10.12	4.34	HS 76.99	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.17	4.52	19.03	5.10	0.00	104.1
4F1	19.83	4.18	17.82	4.71	0.00	112.8
5C1	10.10	4.86	9.08	5.47	0.00	194.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.68	HS 39.22	70.6
HS20	3.27	34.47	HS 65.37	117.7
2F1	5.63	54.64	0.00	84.5
3F1	4.06	37.98	0.00	93.3
4F1	3.91	35.07	0.00	105.6
5C1	4.30	34.99	0.00	171.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 6.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.30	2.41	6.30	2.41	HS 48.16	86.7
HS20	10.50	4.01	10.50	4.01	HS 80.27	144.5
2F1	19.68	6.79	19.68	6.79	0.00	101.8
3F1	19.75	4.72	19.75	4.72	0.00	108.5
4F1	18.50	4.36	18.50	4.36	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00		160.00	
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02 HS20 HS20
Check Point I. D. 7.000 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.867

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.85	1.28	9.81	1.45	HS 25.55	46.0
HS20	18.08	2.13	16.36	2.42	HS 42.58	76.6
2F1	28.19	5.25	25.51	5.97	0.00	78.8
3F1	19.60	3.32	17.73	3.77	0.00	76.3
4F1	18.09	2.81	16.37	3.19	0.00	75.8
5C1	23.58	3.53	21.33	4.01	0.00	141.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.68	60.6
HS20	2.81	2.81	HS 56.14	101.0
2F1	4.98	4.98	0.00	74.8
3F1	3.53	3.53	0.00	81.2
4F1	3.34	3.34	0.00	90.1
5C1	3.73	3.73	0.00	149.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.16	1.34	10.16	1.34	HS 26.72	48.1
HS20	16.93	2.23	16.93	2.23	HS 44.53	80.2
2F1	26.41	5.49	26.41	5.49	0.00	82.4
3F1	18.36	3.47	18.36	3.47	0.00	79.9
4F1	16.95	2.94	16.95	2.94	0.00	79.3

5C1	22.09	3.69	22.09	3.69	0.00	147.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.64	2.31	5.97	2.60	HS 46.18	83.1
HS20	11.07	3.85	9.95	4.34	HS 76.97	138.6
2F1	21.10	6.51	18.97	7.33	0.00	97.6
3F1	21.16	4.52	19.03	5.10	0.00	104.0
4F1	19.82	4.18	17.82	4.70	0.00	112.8
5C1	10.10	4.85	9.08	5.47	0.00	194.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.49	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.67	1.96	HS 39.23	70.6
HS20	34.44	3.27	HS 65.39	117.7
2F1	54.65	5.63	0.00	84.5
3F1	37.99	4.06	0.00	93.3
4F1	35.20	3.91	0.00	105.7
5C1	34.99	4.30	0.00	171.9

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 7.100

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment

-1.5 -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.20	2.41	6.20	2.41	HS 48.15	86.7
HS20	10.33	4.01	10.33	4.01	HS 80.25	144.4
2F1	19.68	6.78	19.68	6.78	0.00	101.8
3F1	19.74	4.72	19.74	4.72	0.00	108.5
4F1	18.49	4.35	18.49	4.35	0.00	117.6

5C1	9.43	5.06	9.43	5.06	0.00	202.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00		
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.5	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.49	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.69	2.36	HS 47.24	85.0
HS20	24.48	3.94	HS 78.73	141.7
2F1	53.90	6.56	0.00	98.3
3F1	37.46	4.82	0.00	110.8
4F1	34.72	4.69	0.00	126.7
5C1	22.97	5.07	0.00	203.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 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. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.84	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)		M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
	4110/ sqrt Fy	19230/ sqrt Fy		
top	22.62	105.86	0.00	390.83
bott	22.62		14.81	106.6

Braced Non Compact Values (B)

24 /		36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00	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	1.82	3.95	1.62	4.40	HS 32.31	58.2
HS20	3.03	6.58	2.69	7.34	HS 53.86	96.9
2F1	4.63	10.10	4.12	11.26	0.00	61.8
3F1	3.64	7.02	3.24	7.83	0.00	74.6
4F1	3.55	6.48	3.16	7.23	0.00	85.3
5C1	3.61	6.88	3.22	7.67	0.00	128.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.59	2.96	HS 59.22	106.6
HS20	15.99	4.93	HS 98.70	177.7
2F1	29.83	7.89	0.00	118.4
3F1	27.41	5.93	0.00	136.4
4F1	34.24	5.80	0.00	156.6
5C1	16.28	6.15	0.00	246.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.65	60.6
HS20	2.80	6.84	2.80	6.84	HS 56.09	101.0
2F1	4.29	10.49	4.29	10.49	0.00	64.4
3F1	3.38	7.29	3.38	7.29	0.00	77.7
4F1	3.29	6.73	3.29	6.73	0.00	88.8

5C1	3.35	7.14	3.35	7.14	0.00	134.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.81		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.58	5.08	1.40	5.65	HS 28.09	50.6
HS20	2.64	8.47	2.34	9.42	HS 46.82	84.3
2F1	3.86	12.99	3.42	14.45	0.00	51.4
3F1	3.01	9.03	2.67	10.04	0.00	61.5
4F1	2.81	8.34	2.49	9.27	0.00	67.3
5C1	3.05	7.55	2.70	8.40	0.00	108.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	2F1	-6.32	11.57	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.84	3.68	HS 73.68	132.6
HS20	11.40	6.14	HS 122.80	221.0
2F1	18.67	9.90	0.00	148.6
3F1	15.63	7.64	0.00	175.7
4F1	18.27	7.65	0.00	206.4
5C1	12.19	7.66	0.00	306.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.27	1.46	5.27	HS 29.29	52.7
HS20	2.44	8.79	2.44	8.79	HS 48.81	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.5
3F1	2.79	9.37	2.79	9.37	0.00	64.1
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			90.873

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 16.5

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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	L	81.05	148.50	0.0	91.50	70.38	162.50		
		-24.97	L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00	
OPER	HS20	105.37	L	81.05	148.50	0.0	91.50	70.38	162.50		
		-24.97	L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00	
OPER	2F1	75.03	L	57.71	152.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.33	R	77.18	172.50	0.0	0.00	0.00	0.00		
		-23.41	L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.80	R	80.62	176.50	0.0	0.00	0.00	0.00		
		-25.35	L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.71	L	73.62	111.50	0.0	0.00	0.00	0.00		
		-36.46	L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	6.78	1.43	7.54	HS 28.53	51.4
HS20	2.68	11.31	2.38	12.56	HS 47.55	85.6
2F1	3.77	17.62	3.34	19.59	0.00	50.1
3F1	2.82	12.25	2.50	13.62	0.00	57.4
4F1	2.70	11.31	2.39	12.57	0.00	64.5
5C1	2.95	7.87	2.62	8.74	0.00	104.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.59	172.1
HS20	7.97	7.97	HS 159.31	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.2
5C1	9.52	9.52	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	7.04	1.49	7.04	HS 29.76	53.6
HS20	2.48	11.73	2.48	11.73	HS 49.59	89.3
2F1	3.48	18.28	3.48	18.28	0.00	52.2
3F1	2.60	12.71	2.60	12.71	0.00	59.9
4F1	2.49	11.73	2.49	11.73	0.00	67.3

5C1	2.73	8.16	2.73	8.16	0.00	109.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00			
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.58	5.08	1.41	5.65
HS20	2.64	8.46	2.34	9.41
2F1	3.86	12.99	3.43	14.45
3F1	3.02	9.03	2.68	10.04
4F1	2.81	8.34	2.49	9.27
5C1	3.05	7.55	2.71	8.40

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	-1.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.6	118.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.64	132.5
HS20	6.14	11.44	HS 122.73	220.9
2F1	9.90	18.69	0.00	148.5
3F1	7.63	15.64	0.00	175.6
4F1	7.64	18.28	0.00	206.3
5C1	7.65	12.20	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00	
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.47	5.27	1.47	5.27	HS 29.31	52.8
HS20	2.44	8.78	2.44	8.78	HS 48.84	87.9
2F1	3.57	13.48	3.57	13.48	0.00	53.6
3F1	2.79	9.37	2.79	9.37	0.00	64.2
4F1	2.60	8.65	2.60	8.65	0.00	70.2

5C1	2.82	7.84	2.82	7.84	0.00	112.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +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	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00			
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.94	1.62	4.40	HS 32.36	58.2
HS20	3.03	6.57	2.70	7.33	HS 53.93	97.1
2F1	4.64	10.09	4.13	11.25	0.00	61.9
3F1	3.65	7.01	3.25	7.82	0.00	74.7
4F1	3.55	6.47	3.16	7.22	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) 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/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.63	HS 59.18	106.5
HS20	4.93	16.05	HS 98.64	177.5
2F1	7.89	29.85	0.00	118.3
3F1	5.93	27.42	0.00	136.3
4F1	5.80	34.24	0.00	156.5
5C1	6.15	16.29	0.00	245.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00	
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.10	1.68	4.10	HS 33.70	60.7
HS20	2.81	6.83	2.81	6.83	HS 56.16	101.1
2F1	4.30	10.48	4.30	10.48	0.00	64.5
3F1	3.38	7.28	3.38	7.28	0.00	77.8
4F1	3.29	6.73	3.29	6.73	0.00	88.9

5C1	3.36	7.14	3.36	7.14	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00			235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00			
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00			235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00			
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00			
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00			
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00			
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.74	3.15	2.45	49.05	88.3
HS20	4.57	5.24	4.09	81.75	147.1
2F1	7.08	8.05	6.33	0.00	94.9
3F1	5.80	5.59	5.19	0.00	119.3
4F1	6.30	5.17	5.63	0.00	139.5
5C1	5.00	5.96	4.47	0.00	178.7

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.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.77	HS 47.21	85.0
HS20	3.93	24.62	HS 78.68	141.6
2F1	6.55	53.91	0.00	98.3
3F1	4.81	37.47	0.00	110.7
4F1	4.69	34.72	0.00	126.6
5C1	5.07	22.98	0.00	202.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 7.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -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	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.27	2.55	3.27	HS 51.00	91.8
HS20	4.25	5.46	4.25	5.46	HS 85.00	153.0
2F1	6.58	8.37	6.58	8.37	0.00	98.7
3F1	5.39	5.82	5.39	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.1

5C1	4.65	6.20	4.65	6.20	0.00	185.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -15.2

Rating Veh.	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	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00			
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00			
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00			
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.86	2.30	6.17	2.60	HS 46.08	82.9
HS20	11.43	3.84	10.28	4.33	HS 76.79	138.2
2F1	21.15	6.49	19.02	7.32	0.00	97.4
3F1	21.31	4.51	19.16	5.09	0.00	103.8
4F1	19.96	4.17	17.95	4.70	0.00	112.5
5C1	10.15	4.84	9.12	5.46	0.00	193.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.82	HS 39.21	70.6
HS20	3.27	34.69	HS 65.35	117.6
2F1	5.63	54.66	0.00	84.4
3F1	4.06	37.99	0.00	93.3
4F1	3.91	35.08	0.00	105.6
5C1	4.30	35.00	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 7.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00	
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00	
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00	
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00	
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.40	2.40	6.40	2.40	HS 48.04	86.5
HS20	10.67	4.00	10.67	4.00	HS 80.07	144.1
2F1	19.73	6.77	19.73	6.77	0.00	101.5
3F1	19.88	4.70	19.88	4.70	0.00	108.2
4F1	18.62	4.34	18.62	4.34	0.00	117.3

5C1	9.47	5.05	9.47	5.05	0.00	201.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.156

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	185.00		
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00			
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	185.00		
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00			
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	0.00		
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	11.05	1.27	10.00	HS 25.46	45.8
HS20	18.42	2.12	16.67	HS 42.43	76.4
2F1	28.26	5.23	25.57	0.00	78.5
3F1	19.64	3.31	17.78	0.00	76.1
4F1	18.14	2.80	16.41	0.00	75.5
5C1	23.72	3.51	21.47	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	28.89	-19.61	22.22	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00		185.00	
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00			
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.05	1.27	10.00	1.45	HS 25.46	45.8
HS20	18.42	2.12	16.67	2.41	HS 42.43	76.4
2F1	28.26	5.23	25.57	5.95	0.00	78.5
3F1	19.64	3.31	17.78	3.76	0.00	76.1
4F1	18.14	2.80	16.41	3.18	0.00	75.5
5C1	23.72	3.51	21.47	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-28.90	28.89	-22.23	22.22	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.68	HS 33.64	60.6
HS20	2.81	2.80	HS 56.07	100.9
2F1	4.98	4.98	0.00	74.7
3F1	3.53	3.52	0.00	81.1
4F1	3.34	3.33	0.00	90.0
5C1	3.73	3.73	0.00	149.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.35	1.33	10.35	1.33	HS 26.63	47.9
HS20	17.26	2.22	17.26	2.22	HS 44.38	79.9
2F1	26.48	5.47	26.48	5.47	0.00	82.1
3F1	18.40	3.46	18.40	3.46	0.00	79.6
4F1	16.99	2.93	16.99	2.93	0.00	79.0

5C1	22.22	3.67	22.22	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00		187.50	
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00			
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.70	2.31	6.03	2.60	HS 46.10	83.0
HS20	11.18	3.84	10.05	4.33	HS 76.83	138.3
2F1	21.12	6.49	18.99	7.32	0.00	97.4
3F1	21.19	4.51	19.06	5.09	0.00	103.8
4F1	19.85	4.17	17.85	4.70	0.00	112.6
5C1	10.12	4.84	9.10	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.3	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	2F1	-2.24	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	27.00	-2.48	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	27.99	-2.68	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.51	25.49	-2.70	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.21	1.96	HS 39.18	70.5
HS20	35.35	3.27	HS 65.30	117.5
2F1	54.96	5.62	0.00	84.4
3F1	38.20	4.05	0.00	93.2
4F1	35.40	3.91	0.00	105.5
5C1	35.16	4.29	0.00	171.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.26	2.40	6.26	2.40	HS 48.06	86.5
HS20	10.43	4.01	10.43	4.01	HS 80.11	144.2
2F1	19.71	6.77	19.71	6.77	0.00	101.6
3F1	19.77	4.71	19.77	4.71	0.00	108.3
4F1	18.52	4.35	18.52	4.35	0.00	117.4

5C1	9.44	5.05	9.44	5.05	0.00	202.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00		115.00	
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00		115.00	
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.96	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.60	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.7
OPER	151.3	-121.6	111.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	2F1	-2.24	16.97	-1.73	13.05	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	23.10	-2.48	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	23.71	-2.68	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	21.92	-4.06	16.86	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.94	2.36	HS 47.18	84.9
HS20	24.90	3.93	HS 78.63	141.5
2F1	54.20	6.55	0.00	98.2
3F1	37.68	4.81	0.00	110.6
4F1	34.92	4.69	0.00	126.5
5C1	23.06	5.07	0.00	202.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.91	91.6
HS20	4.24	5.46	4.24	5.46	HS 84.85	152.7
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.3

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 9.0

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	174.5	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.95	1.61	4.41	HS 32.27	58.1
HS20	3.02	6.59	2.69	7.35	HS 53.79	96.8
2F1	4.63	10.11	4.12	11.27	0.00	61.8
3F1	3.64	7.03	3.24	7.84	0.00	74.5
4F1	3.54	6.49	3.15	7.24	0.00	85.2
5C1	3.61	6.89	3.21	7.68	0.00	128.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.65	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	19.48	-2.68	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.34	18.36	-5.65	14.12	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.70	2.96	HS 59.15	106.5
HS20	16.17	4.93	HS 98.58	177.4
2F1	29.86	7.88	0.00	118.3
3F1	27.43	5.92	0.00	136.2
4F1	34.43	5.79	0.00	156.4
5C1	16.34	6.14	0.00	245.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.11	1.68	4.11	HS 33.61	60.5
HS20	2.80	6.84	2.80	6.84	HS 56.02	100.8
2F1	4.29	10.50	4.29	10.50	0.00	64.3
3F1	3.37	7.30	3.37	7.30	0.00	77.6
4F1	3.29	6.74	3.29	6.74	0.00	88.7

5C1	3.35	7.15	3.35	7.15	0.00	133.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			91.121

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.01		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.5 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-171.2	151.2	-190.4
OPER	300.6C	-268.7	268.7	-300.6C	284.0	-285.3	252.0	-317.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00			
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00			
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.58	5.09	1.40	5.66
HS20	2.63	8.49	2.33	9.44
2F1	3.85	13.02	3.41	14.48
3F1	3.01	9.05	2.67	10.07
4F1	2.80	8.36	2.49	9.30
5C1	3.04	7.58	2.70	8.43

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	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	2F1	-6.33	11.57	-4.87	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.56	15.00	-5.81	11.54	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.66	14.97	-7.43	11.51	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.90	3.68	HS 73.59	132.5
HS20	11.50	6.13	HS 122.64	220.8
2F1	18.69	9.89	0.00	148.4
3F1	15.65	7.63	0.00	175.5
4F1	18.29	7.64	0.00	206.2
5C1	12.24	7.65	0.00	306.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.5 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00	
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00	
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.28	1.46	5.28	HS 29.21	52.6
HS20	2.43	8.81	2.43	8.81	HS 48.68	87.6
2F1	3.56	13.52	3.56	13.52	0.00	53.4
3F1	2.78	9.40	2.78	9.40	0.00	64.0
4F1	2.59	8.68	2.59	8.68	0.00	70.0

5C1	2.81	7.86	2.81	7.86	0.00	112.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.7 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00	
OPER	HS20	105.35	L	81.04	173.50	0.0	91.75	70.58	187.50		
		-24.96	L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00	
OPER	2F1	75.01	L	57.70	177.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	100.30	R	77.16	197.50	0.0	0.00	0.00	0.00		
		-23.40	L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.77	R	80.59	201.50	0.0	0.00	0.00	0.00		
		-25.34	L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	96.04	R	73.88	238.50	0.0	0.00	0.00	0.00		
		-36.40	L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.92	1.42	7.69	HS 28.41	51.1
HS20	2.67	11.54	2.37	12.82	HS 47.35	85.2
2F1	3.75	17.70	3.33	19.67	0.00	49.9
3F1	2.81	12.30	2.49	13.67	0.00	57.2
4F1	2.69	11.36	2.38	12.62	0.00	64.3
5C1	2.93	7.91	2.60	8.79	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	2F1	-8.88	8.87	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.14	11.13	-8.57	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	7.99	0.00	0.00	0.00	0.00
OPER	5C1	-12.19	12.22	-9.37	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.79	4.77	HS 95.48	171.9
HS20	7.98	7.96	HS 159.13	286.4
2F1	13.13	13.09	0.00	196.4
3F1	10.47	10.44	0.00	240.1
4F1	11.21	11.18	0.00	301.9
5C1	9.56	9.51	0.00	380.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	7.18	1.48	7.18	HS 29.63	53.3
HS20	2.47	11.97	2.47	11.97	HS 49.39	88.9
2F1	3.47	18.36	3.47	18.36	0.00	52.0
3F1	2.59	12.76	2.59	12.76	0.00	59.7
4F1	2.48	11.78	2.48	11.78	0.00	67.0

5C1	2.71	8.20	2.71	8.20	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending			Modulus - Z
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00			
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00			
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00			
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00			
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.58	5.15	1.40	5.73	HS 27.95	50.3
HS20	2.63	8.59	2.33	9.55	HS 46.59	83.9
2F1	3.84	13.11	3.41	14.58	0.00	51.1
3F1	3.00	9.11	2.66	10.13	0.00	61.2
4F1	2.80	8.41	2.48	9.36	0.00	67.0
5C1	3.03	7.61	2.69	8.47	0.00	107.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	2F1	-11.58	6.32	-8.91	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-15.00	6.46	-11.54	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.68	-11.51	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.69	6.83	HS 73.75	132.8
HS20	6.15	11.38	HS 122.92	221.3
2F1	9.91	18.67	0.00	148.6
3F1	7.64	15.63	0.00	175.8
4F1	7.65	18.26	0.00	206.5
5C1	7.66	12.19	0.00	306.6

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 8.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00	
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00	
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00	
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00	
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.35	1.46	5.35	HS 29.15	52.5
HS20	2.43	8.91	2.43	8.91	HS 48.58	87.4
2F1	3.55	13.61	3.55	13.61	0.00	53.3
3F1	2.78	9.46	2.78	9.46	0.00	63.8
4F1	2.59	8.73	2.59	8.73	0.00	69.8

5C1	2.80	7.90	2.80	7.90	0.00	112.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.0 10.0

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	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00			
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00			
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00			
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00			
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	4.01	1.61	4.47	HS 32.14	57.8
HS20	3.01	6.68	2.68	7.45	HS 53.56	96.4
2F1	4.61	10.20	4.10	11.37	0.00	61.5
3F1	3.63	7.09	3.23	7.90	0.00	74.2
4F1	3.53	6.55	3.14	7.30	0.00	84.8
5C1	3.57	6.95	3.17	7.74	0.00	127.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.0	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	2F1	-14.31	4.01	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.06	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.99	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.96	9.57	HS 59.26	106.7
HS20	4.94	15.95	HS 98.76	177.8
2F1	7.90	29.82	0.00	118.5
3F1	5.93	27.39	0.00	136.4
4F1	5.80	34.18	0.00	156.7
5C1	6.16	16.27	0.00	246.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.0 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00	
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00	
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00	
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00	
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.16	1.67	4.16	HS 33.48	60.3
HS20	2.79	6.94	2.79	6.94	HS 55.80	100.4
2F1	4.27	10.60	4.27	10.60	0.00	64.1
3F1	3.36	7.36	3.36	7.36	0.00	77.3
4F1	3.27	6.80	3.27	6.80	0.00	88.4

5C1	3.31	7.21	3.31	7.21	0.00	132.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.5

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	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00			177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00			177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00			
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00			
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00			
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00			
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.72	3.20	2.43	3.59	HS 48.68	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.14	146.0
2F1	7.03	8.15	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.5
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.89	6.04	4.36	6.76	0.00	174.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	2F1	-16.97	2.26	-13.06	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.25	-17.78	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.72	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	14.65	HS 47.27	85.1
HS20	3.94	24.41	HS 78.78	141.8
2F1	6.56	53.82	0.00	98.4
3F1	4.82	37.41	0.00	110.8
4F1	4.70	34.67	0.00	126.8
5C1	5.08	22.95	0.00	203.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.800 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.53	3.33	2.53	3.33	HS 50.63	91.1
HS20	4.22	5.55	4.22	5.55	HS 84.39	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.82	5.44	5.82	5.44	0.00	146.9

5C1	4.54	6.28	4.54	6.28	0.00	181.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.900 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00			
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00			
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00			
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00			
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.64	2.34	5.97	2.63	HS 46.78	84.2
HS20	11.07	3.90	9.95	4.39	HS 77.97	140.3
2F1	21.03	6.59	18.89	7.42	0.00	98.9
3F1	18.72	4.58	16.81	5.16	0.00	105.4
4F1	17.49	4.23	15.71	4.76	0.00	114.2
5C1	9.64	4.91	8.66	5.53	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	8.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.3	-109.7	123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	2F1	-19.45	2.26	-14.97	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.25	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	3.52	-19.59	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	20.56	HS 39.26	70.7
HS20	3.27	34.26	HS 65.44	117.8
2F1	5.64	54.57	0.00	84.5
3F1	4.06	37.93	0.00	93.4
4F1	3.92	35.02	0.00	105.7
5C1	4.31	34.94	0.00	172.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 8.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.20	2.44	6.20	2.44	HS 48.76	87.8
HS20	10.32	4.06	10.32	4.06	HS 81.26	146.3
2F1	19.61	6.87	19.61	6.87	0.00	103.0
3F1	17.45	4.77	17.45	4.77	0.00	109.8
4F1	16.31	4.41	16.31	4.41	0.00	119.0

5C1	8.99	5.12	8.99	5.12	0.00	204.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00		
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00		
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00			
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00			
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00			
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00			
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.00	1.29	8.14	1.47	HS 25.82	46.5
HS20	15.00	2.15	13.56	2.44	HS 43.04	77.5
2F1	24.92	5.30	22.53	6.01	0.00	79.4
3F1	17.32	3.35	15.66	3.80	0.00	77.0
4F1	16.02	2.83	14.49	3.22	0.00	76.5
5C1	19.48	3.56	17.61	4.05	0.00	142.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.000	2F1	2F1
		3F1	3F1
		4F1	4F1
		5C1	5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	2F1	-19.45	21.63	-14.97	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.54	-20.77	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.28	-21.54	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	28.86	-19.59	22.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	88.726

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00			
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00			
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00			
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00			
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.00	1.29	8.14	1.47
HS20	15.00	2.15	13.56	2.44
2F1	24.92	5.30	22.53	6.01
3F1	17.32	3.35	15.66	3.80
4F1	16.02	2.83	14.49	3.22
5C1	19.48	3.56	17.61	4.05

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.7	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	2F1	-21.64	21.63	-16.65	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.54	-23.52	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.28	-24.87	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-28.84	28.86	-22.18	22.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.69	1.69	HS 33.72	60.7
HS20	2.81	2.82	HS 56.20	101.2
2F1	4.99	5.01	0.00	74.8
3F1	3.53	3.55	0.00	81.2
4F1	3.34	3.36	0.00	90.2
5C1	3.74	3.75	0.00	149.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.43	1.35	8.43	1.35	HS 27.00	48.6
HS20	14.05	2.25	14.05	2.25	HS 45.00	81.0
2F1	23.33	5.54	23.33	5.54	0.00	83.0
3F1	16.22	3.50	16.22	3.50	0.00	80.6
4F1	15.01	2.96	15.01	2.96	0.00	80.0

5C1	18.24	3.73	18.24	3.73	0.00	149.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.3 -13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00			
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00			
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00			
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00			
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.57	2.32	5.91	2.61	HS 46.38	83.5
HS20	10.95	3.87	9.84	4.35	HS 77.30	139.1
2F1	20.93	6.53	18.81	7.36	0.00	98.0
3F1	21.07	4.54	18.93	5.11	0.00	104.4
4F1	19.73	4.19	17.73	4.72	0.00	113.2
5C1	10.04	4.88	9.03	5.49	0.00	195.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.6	66.0
OPER	151.3	-122.7	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	2F1	-2.53	19.43	-1.95	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	26.96	-2.80	20.74	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	27.94	-3.02	21.49	0.00	0.00	0.00	0.00
OPER	5C1	-3.90	25.45	-3.00	19.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.18	1.97	HS 39.46	71.0
HS20	30.30	3.29	HS 65.77	118.4
2F1	48.44	5.66	0.00	84.9
3F1	33.68	4.08	0.00	93.9
4F1	31.27	3.94	0.00	106.3
5C1	31.51	4.32	0.00	172.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.100 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.13	2.42	6.13	2.42	HS 48.34	87.0
HS20	10.21	4.03	10.21	4.03	HS 80.57	145.0
2F1	19.52	6.81	19.52	6.81	0.00	102.1
3F1	19.65	4.73	19.65	4.73	0.00	108.8
4F1	18.40	4.37	18.40	4.37	0.00	118.0

5C1	9.37	5.08	9.37	5.08	0.00	203.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00			
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00			
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.73	3.15	2.44	3.53	HS 48.91	88.0
HS20	4.56	5.26	4.08	5.88	HS 81.51	146.7
2F1	7.06	8.06	6.31	9.03	0.00	94.7
3F1	5.79	5.61	5.17	6.28	0.00	119.0
4F1	6.28	5.18	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.45	6.69	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.6	67.0
OPER	151.3	-121.1	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	2F1	-2.53	16.94	-1.95	13.03	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	23.05	-2.80	17.73	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	23.67	-3.02	18.20	0.00	0.00	0.00	0.00
OPER	5C1	-5.87	21.87	-4.52	16.82	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.38	2.38	HS 47.54	85.6
HS20	23.97	3.96	HS 79.23	142.6
2F1	47.78	6.59	0.00	98.9
3F1	33.22	4.84	0.00	111.4
4F1	30.84	4.72	0.00	127.4
5C1	20.61	5.11	0.00	204.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.0	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
OPER 278.4	279.4	-279.4	279.4	-279.4	280.4	-278.4	280.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00	
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00	
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.85	91.5
HS20	4.24	5.47	4.24	5.47	HS 84.76	152.6
2F1	6.56	8.39	6.56	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.7
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.300 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.7 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00			
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00			
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00			
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00			
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.83	3.94	1.63	4.39	HS	58.6
HS20	3.05	6.57	2.71	7.32	HS	97.6
2F1	4.65	10.07	4.14	11.24	0.00	62.1
3F1	3.66	7.00	3.26	7.81	0.00	75.0
4F1	3.57	6.47	3.17	7.21	0.00	85.7
5C1	3.63	6.84	3.23	7.63	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	2.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.6	68.0
OPER	151.3	-119.4	113.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	2F1	-4.03	14.27	-3.10	10.98	0.00	0.00	0.00	0.00
OPER	3F1	-4.39	18.99	-3.38	14.61	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	19.42	-3.02	14.94	0.00	0.00	0.00	0.00
OPER	5C1	-8.12	18.31	-6.25	14.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.43	2.98	HS 59.62	107.3
HS20	15.72	4.97	HS 99.36	178.9
2F1	29.58	7.95	0.00	119.2
3F1	27.18	5.97	0.00	137.3
4F1	30.41	5.84	0.00	157.6
5C1	14.70	6.19	0.00	247.7

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 9.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00	
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00	
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00	
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00	
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.70	4.09	1.70	4.09	HS 33.89	61.0
HS20	2.82	6.82	2.82	6.82	HS 56.49	101.7
2F1	4.31	10.46	4.31	10.46	0.00	64.7
3F1	3.40	7.27	3.40	7.27	0.00	78.1
4F1	3.31	6.72	3.31	6.72	0.00	89.3

5C1	3.37	7.11	3.37	7.11	0.00	134.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.78	28.67	28.67	1.699	999999.000	88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		5.63		108.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.1 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00		
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00			
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00			
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00			
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00			
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	5.06	1.43	5.63	HS 28.53	51.3
HS20	2.68	8.43	2.38	9.38	HS 47.54	85.6
2F1	3.89	12.93	3.46	14.40	0.00	51.9
3F1	3.04	8.99	2.70	10.01	0.00	62.2
4F1	2.84	8.30	2.52	9.24	0.00	68.0
5C1	3.08	7.44	2.73	8.28	0.00	109.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.2
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	2F1	-6.35	11.53	-4.89	8.87	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	14.95	-5.84	11.50	0.00	0.00	0.00	0.00
OPER	4F1	-6.49	14.93	-4.99	11.48	0.00	0.00	0.00	0.00
OPER	5C1	-10.51	14.92	-8.09	11.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.75	3.70	HS 74.08	133.4
HS20	11.24	6.17	HS 123.47	222.3
2F1	18.52	9.98	0.00	149.7
3F1	15.50	7.70	0.00	177.0
4F1	18.12	7.71	0.00	208.2
5C1	11.19	7.71	0.00	308.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.400 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00	
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00	
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00	
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00	
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.25	1.49	5.25	HS 29.73	53.5
HS20	2.48	8.75	2.48	8.75	HS 49.55	89.2
2F1	3.61	13.42	3.61	13.42	0.00	54.1
3F1	2.82	9.33	2.82	9.33	0.00	64.8
4F1	2.63	8.61	2.63	8.61	0.00	70.9

5C1	2.85	7.72	2.85	7.72	0.00	113.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.78	28.67	28.67	1.699
			999999.000
			88.766

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.2 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	2F1	74.76	L	57.51	202.50	0.0	0.00	0.00	0.00		
		-18.29	R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	R	76.84	222.50	0.0	0.00	0.00	0.00		
		-26.30	R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	L	80.26	198.50	0.0	0.00	0.00	0.00		
		-28.43	R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	L	73.34	161.50	0.0	0.00	0.00	0.00		
		-38.29	R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.63	5.60	1.45	6.24	HS 28.98	52.2
HS20	2.72	9.34	2.41	10.39	HS 48.31	87.0
2F1	3.82	15.51	3.39	17.26	0.00	50.9
3F1	2.86	10.79	2.54	12.00	0.00	58.4
4F1	2.74	9.98	2.43	11.10	0.00	65.6
5C1	2.99	7.41	2.66	8.24	0.00	106.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.1	-0.4	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	2F1	-8.91	8.83	-6.86	6.80	0.00	0.00	0.00	0.00
OPER	3F1	-11.18	11.07	-8.60	8.52	0.00	0.00	0.00	0.00
OPER	4F1	-10.46	10.32	-8.04	7.94	0.00	0.00	0.00	0.00
OPER	5C1	-12.98	12.17	-9.99	9.36	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.70	4.81	HS 94.10	169.4
HS20	7.84	8.02	HS 156.83	282.3
2F1	13.01	13.22	0.00	195.2
3F1	10.37	10.55	0.00	238.5
4F1	11.09	11.31	0.00	299.5
5C1	8.93	9.60	0.00	357.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.500 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	2F1	74.76 L	57.51	202.50	0.0	0.00	0.00	0.00	
		-18.29 R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 R	76.84	222.50	0.0	0.00	0.00	0.00	
		-26.30 R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 L	80.26	198.50	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 L	73.34	161.50	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.51	5.82	1.51	5.82	HS 30.21	54.4
HS20	2.52	9.69	2.52	9.69	HS 50.35	90.6
2F1	3.54	16.10	3.54	16.10	0.00	53.0
3F1	2.65	11.19	2.65	11.19	0.00	60.9
4F1	2.53	10.35	2.53	10.35	0.00	68.4

5C1	2.77	7.69	2.77	7.69	0.00	110.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00			
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00			
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00			
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.62	4.11	1.44	4.58	HS 28.73	51.7
HS20	2.69	6.85	2.39	7.63	HS 47.88	86.2
2F1	3.94	11.38	3.50	12.68	0.00	52.5
3F1	3.08	7.91	2.74	8.82	0.00	63.0
4F1	2.87	7.32	2.55	8.16	0.00	68.9
5C1	3.20	6.93	2.85	7.72	0.00	114.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.600		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	71.2
OPER	151.3	-114.2	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	2F1	-11.62	6.29	-8.94	4.84	0.00	0.00	0.00	0.00
OPER	3F1	-15.07	7.48	-11.59	5.75	0.00	0.00	0.00	0.00
OPER	4F1	-15.06	6.33	-11.58	4.87	0.00	0.00	0.00	0.00
OPER	5C1	-15.45	9.64	-11.88	7.41	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.62	7.08	HS 72.45	130.4
HS20	6.04	11.81	HS 120.75	217.4
2F1	9.82	18.86	0.00	147.4
3F1	7.58	15.86	0.00	174.2
4F1	7.58	18.75	0.00	204.7
5C1	7.39	12.31	0.00	295.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.8 10.8

Rating Veh. ber	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 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	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00	
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00	
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	4.27	1.50	4.27	HS 29.93	53.9
HS20	2.49	7.11	2.49	7.11	HS 49.88	89.8
2F1	3.65	11.82	3.65	11.82	0.00	54.7
3F1	2.85	8.22	2.85	8.22	0.00	65.6
4F1	2.66	7.60	2.66	7.60	0.00	71.8

5C1	2.97	7.20	2.97	7.20	0.00	118.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending			Modulus - Z
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 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	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00	0.00		
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00	0.00		
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00	0.00		
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00	0.00		
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.87	3.18	1.66	3.55	HS 33.29	59.9
HS20	3.11	5.30	2.77	5.92	HS 55.49	99.9
2F1	4.76	8.81	4.25	9.84	0.00	63.7
3F1	3.75	6.12	3.35	6.84	0.00	77.0
4F1	3.65	5.66	3.26	6.33	0.00	88.0
5C1	3.99	6.15	3.56	6.87	0.00	142.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.5	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	2F1	-14.36	3.98	-11.04	3.06	0.00	0.00	0.00	0.00
OPER	3F1	-19.12	4.27	-14.71	3.28	0.00	0.00	0.00	0.00
OPER	4F1	-19.55	3.52	-15.04	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-18.72	7.32	-14.40	5.63	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.93	10.04	HS 58.69	105.6
HS20	4.89	16.74	HS 97.81	176.1
2F1	7.83	30.24	0.00	117.5
3F1	5.88	28.18	0.00	135.3
4F1	5.75	34.18	0.00	155.3
5C1	6.01	16.43	0.00	240.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.700 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00	
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00	
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00	
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00	
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.73	3.31	1.73	3.31	HS 34.65	62.4
HS20	2.89	5.51	2.89	5.51	HS 57.74	103.9
2F1	4.42	9.15	4.42	9.15	0.00	66.3
3F1	3.48	6.36	3.48	6.36	0.00	80.1
4F1	3.39	5.89	3.39	5.89	0.00	91.6

5C1	3.70	6.39	3.70	6.39	0.00	148.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00			
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00			
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00			
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00			
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.84	2.53	2.55	2.84	HS 50.50	90.9
HS20	4.74	4.21	4.25	4.72	HS 84.17	151.5
2F1	7.33	6.99	6.57	7.85	0.00	98.6
3F1	6.03	4.86	5.41	5.46	0.00	111.8
4F1	6.55	4.50	5.87	5.05	0.00	121.4
5C1	5.97	5.22	5.35	5.86	0.00	208.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	2F1	-17.02	2.27	-13.09	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.17	3.26	-17.82	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-23.81	3.52	-18.32	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-22.39	5.27	-17.22	4.06	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.34	15.69	HS 46.80	84.2
HS20	3.90	26.15	HS 77.99	140.4
2F1	6.51	53.80	0.00	97.6
3F1	4.78	37.40	0.00	109.9
4F1	4.65	34.66	0.00	125.6
5C1	4.95	23.13	0.00	197.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.0 -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00	
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00	
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00	
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00	
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.65	2.63	2.65	2.63	HS 52.58	94.6
HS20	4.41	4.38	4.41	4.38	HS 87.64	157.7
2F1	6.83	7.28	6.83	7.28	0.00	102.4
3F1	5.62	5.06	5.62	5.06	0.00	116.4
4F1	6.10	4.68	6.10	4.68	0.00	126.4

5C1	5.56	5.44	5.56	5.44	0.00	217.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 9.900 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00			
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00			
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00			
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00			
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	8.31	1.94	7.49	2.19	HS 38.82	69.9
HS20	13.85	3.23	12.49	3.66	HS 64.70	116.5
2F1	22.54	5.61	20.32	6.34	0.00	84.1
3F1	30.42	3.90	27.42	4.41	0.00	89.6
4F1	32.58	3.61	29.38	4.08	0.00	97.3
5C1	13.57	3.99	12.23	4.52	0.00	159.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	9.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	2F1	-19.49	2.27	-14.99	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	3.26	-20.81	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	3.53	-21.59	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	3.52	-20.15	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.94	21.33	HS 38.87	70.0
HS20	3.24	35.55	HS 64.78	116.6
2F1	5.60	54.55	0.00	84.0
3F1	4.03	37.92	0.00	92.7
4F1	3.89	35.01	0.00	104.9
5C1	4.16	35.13	0.00	166.6

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02 HS20 HS20
Check Point I. D. 9.900 2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-2.6 -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00	
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00	
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00	
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00	
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.77	2.03	7.77	2.03	HS 40.53	73.0
HS20	12.94	3.38	12.94	3.38	HS 67.55	121.6
2F1	21.06	5.85	21.06	5.85	0.00	87.8
3F1	28.43	4.07	28.43	4.07	0.00	93.6
4F1	30.45	3.76	30.45	3.76	0.00	101.6

5C1	12.68	4.17	12.68	4.17	0.00	166.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			93.754

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.33		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	215.00		
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00			
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	215.00		
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00			
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	0.00		
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	0.00		
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	0.00		
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	0.00		
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	2F1	-19.49	22.27	-14.99	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	31.91	-20.81	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	34.28	-21.59	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	30.41	-20.15	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	118.099

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	13.00	1.17	10.07	1.64	HS 23.40	42.1
HS20	21.67	1.95	16.79	2.74	HS 39.01	70.2
2F1	33.24	4.49	25.76	6.31	0.00	67.3
3F1	23.11	3.00	17.90	4.22	0.00	68.9
4F1	21.34	2.49	16.53	3.50	0.00	67.1
5C1	27.90	2.74	21.62	3.85	0.00	109.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.000	2F1	2F1
		3F1	3F1
		4F1	4F1
		5C1	5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-8.1	9.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	2F1	-21.66	22.27	-16.66	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-30.61	31.91	-23.54	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-32.38	34.28	-24.91	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-29.69	30.41	-22.84	23.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.79	HS 33.39	60.1
HS20	2.78	2.98	HS 55.65	100.2
2F1	4.96	5.47	0.00	74.4
3F1	3.51	3.82	0.00	80.7
4F1	3.32	3.56	0.00	89.5
5C1	3.62	4.01	0.00	144.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.42	1.23	10.42	1.23	HS 24.53	44.1
HS20	17.36	2.04	17.36	2.04	HS 40.88	73.6
2F1	26.64	4.70	26.64	4.70	0.00	70.5
3F1	18.52	3.14	18.52	3.14	0.00	72.3
4F1	17.10	2.61	17.10	2.61	0.00	70.4

5C1	22.36	2.87	22.36	2.87	0.00	114.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	35.20	35.20	2.861
			999999.000
			99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00			
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00			
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00			
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00			
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	8.52	2.60	7.62	2.95	HS 51.97	93.5
HS20	14.20	4.33	12.70	4.91	HS 86.62	155.9
2F1	25.55	7.32	22.84	8.31	0.00	109.8
3F1	24.15	5.09	21.60	5.78	0.00	117.1
4F1	22.62	4.70	20.23	5.33	0.00	126.9
5C1	11.61	5.16	10.39	5.86	0.00	206.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.9	0.0	7.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.7	74.2
OPER	172.1	-141.1	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	2F1	-0.49	20.47	-0.37	15.74	0.00	0.00	0.00	0.00
OPER	3F1	-0.70	28.87	-0.54	22.21	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	30.41	-0.58	23.39	0.00	0.00	0.00	0.00
OPER	5C1	-1.11	27.42	-0.85	21.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	56.69	2.04	HS 40.77	73.4
HS20	94.49	3.40	HS 67.94	122.3
2F1	290.18	6.04	0.00	90.6
3F1	201.70	4.28	0.00	98.5
4F1	186.92	4.07	0.00	109.8
5C1	126.98	4.51	0.00	180.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00	
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00	
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00	
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.91	2.71	7.91	2.71	HS 54.19	97.5
HS20	13.18	4.52	13.18	4.52	HS 90.32	162.6
2F1	23.70	7.64	23.70	7.64	0.00	114.5
3F1	22.41	5.31	22.41	5.31	0.00	122.1
4F1	20.99	4.90	20.99	4.90	0.00	132.3

5C1	10.77	5.39	10.77	5.39	0.00	215.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 10.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.1 -0.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00			
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00		
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00			
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00			
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00			
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00			
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 53.99	97.2
HS20	5.06	5.72	4.50	6.44	HS 89.98	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	129.9
4F1	6.81	5.63	6.05	6.35	0.00	152.1
5C1	5.53	6.46	4.91	7.28	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.7	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.6	75.2
OPER	172.1	-139.4	125.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	2F1	-1.56	18.38	-1.20	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.30	25.44	-1.00	19.57	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	26.13	-0.58	20.10	0.00	0.00	0.00	0.00
OPER	5C1	-2.80	24.15	-2.15	18.58	0.00	0.00	0.00	0.00

Rating Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.56	2.40	HS 47.91	86.2
HS20	44.27	3.99	HS 79.85	143.7
2F1	89.07	6.82	0.00	102.3
3F1	107.27	4.93	0.00	113.3
4F1	184.64	4.80	0.00	129.6
5C1	49.75	5.19	0.00	207.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.81	3.57	2.81	3.57	HS 56.14	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.57	168.4
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.35	5.88	6.35	0.00	135.1
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1	5.11	6.72	5.11	6.72	0.00	204.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	35.20	35.20	2.861
			999999.000
			99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.7 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00			
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00			
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00			
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.87	4.11	1.65	4.61	HS 33.03	59.5
HS20	3.12	6.85	2.75	7.68	HS 55.05	99.1
2F1	4.90	10.52	4.33	11.78	0.00	64.9
3F1	3.79	7.31	3.35	8.19	0.00	77.0
4F1	3.70	6.75	3.27	7.56	0.00	88.2
5C1	3.83	7.74	3.38	8.67	0.00	135.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.6	76.3
OPER	172.1	-137.7	127.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	2F1	-3.16	16.05	-2.43	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.43	21.68	-2.64	16.68	0.00	0.00	0.00	0.00
OPER	4F1	-2.52	22.18	-1.94	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.78	20.67	-3.68	15.90	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.00	2.94	HS 58.80	105.8
HS20	26.67	4.90	HS 98.00	176.4
2F1	43.52	7.92	0.00	118.7
3F1	40.11	5.86	0.00	134.8
4F1	54.68	5.73	0.00	154.7
5C1	28.80	6.15	0.00	245.9

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02

Check Point I. D. 10.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7

Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.72	4.27	1.72	4.27	HS 34.41	61.9
HS20	2.87	7.12	2.87	7.12	HS 57.36	103.2
2F1	4.51	10.92	4.51	10.92	0.00	67.6
3F1	3.49	7.59	3.49	7.59	0.00	80.3
4F1	3.40	7.01	3.40	7.01	0.00	91.9

5C1	3.52	8.03	3.52	8.03	0.00	140.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	35.20	35.20	2.861	999999.000	99.328

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		26.33		105.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00			
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00			
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00			
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00			
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.56	4.96	1.38	5.53	HS 27.51	49.5
HS20	2.61	8.26	2.29	9.23	HS 45.85	82.5
2F1	3.86	12.68	3.39	14.15	0.00	50.9
3F1	2.99	8.81	2.63	9.84	0.00	60.5
4F1	2.79	8.14	2.45	9.08	0.00	66.2
5C1	3.04	9.32	2.68	10.41	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-81.6	77.3
OPER	172.1	-135.9	128.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	2F1	-5.06	13.52	-3.89	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-6.00	17.64	-4.62	13.57	0.00	0.00	0.00	0.00
OPER	4F1	-5.13	18.09	-3.94	13.92	0.00	0.00	0.00	0.00
OPER	5C1	-6.97	17.52	-5.36	13.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.86	3.82	HS 76.34	137.4
HS20	18.10	6.36	HS 127.23	229.0
2F1	26.87	9.53	0.00	142.9
3F1	22.64	7.30	0.00	167.9
4F1	26.51	7.12	0.00	192.2
5C1	19.49	7.35	0.00	294.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.43	5.14	1.43	5.14	HS 28.71	51.7
HS20	2.39	8.57	2.39	8.57	HS 47.85	86.1
2F1	3.54	13.15	3.54	13.15	0.00	53.1
3F1	2.75	9.14	2.75	9.14	0.00	63.2
4F1	2.56	8.44	2.56	8.44	0.00	69.1

5C1	2.79	9.67	2.79	9.67	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00			
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00			
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00			
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00			
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.46	6.06	1.28	6.76
HS20	2.42	10.11	2.13	11.26
2F1	3.55	15.51	3.11	17.28
3F1	2.60	10.78	2.28	12.01
4F1	2.45	9.95	2.14	11.09
5C1	2.73	11.41	2.39	12.72

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-80.5	78.3
OPER	172.1	-134.2	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	2F1	-7.23	10.81	-5.56	8.32	0.00	0.00	0.00	0.00
OPER	3F1	-9.00	14.12	-6.92	10.86	0.00	0.00	0.00	0.00
OPER	4F1	-8.23	14.21	-6.33	10.93	0.00	0.00	0.00	0.00
OPER	5C1	-9.33	14.97	-7.18	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.46	4.67	HS 93.42	168.2
HS20	12.43	7.78	HS 155.70	280.3
2F1	18.56	12.07	0.00	181.1
3F1	14.92	9.24	0.00	212.6
4F1	16.30	9.19	0.00	248.1
5C1	14.39	8.72	0.00	348.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50	
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50	
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00	
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00	
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00	
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00	
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00

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	1.33	6.28	1.33	6.28	HS 26.65	48.0
HS20	2.22	10.47	2.22	10.47	HS 44.42	80.0
2F1	3.25	16.07	3.25	16.07	0.00	48.8
3F1	2.38	11.17	2.38	11.17	0.00	54.8
4F1	2.24	10.31	2.24	10.31	0.00	60.5

5C1	2.50	11.82	2.50	11.82	0.00	99.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 10.600 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00			
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00			
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00			
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00			
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.36	7.63	1.19	8.49	HS 23.89	43.0
HS20	2.27	12.71	1.99	14.16	HS 39.82	71.7
2F1	3.38	19.50	2.96	21.72	0.00	44.4
3F1	2.53	13.56	2.22	15.10	0.00	51.0
4F1	2.36	12.52	2.07	13.94	0.00	55.9
5C1	2.65	14.35	2.32	15.98	0.00	92.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	2F1	-9.63	7.97	-7.41	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-12.38	10.92	-9.53	8.40	0.00	0.00	0.00	0.00
OPER	4F1	-12.28	10.15	-9.44	7.81	0.00	0.00	0.00	0.00
OPER	5C1	-12.15	12.27	-9.35	9.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.55	6.22	HS 110.98	199.8
HS20	9.25	10.38	HS 184.96	332.9
2F1	13.74	16.60	0.00	206.1
3F1	10.69	12.12	0.00	245.9
4F1	10.78	13.05	0.00	291.1
5C1	10.89	10.79	0.00	431.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00	
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00	
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00	
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00	
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.25	7.90	1.25	7.90	HS 24.96	44.9
HS20	2.08	13.17	2.08	13.17	HS 41.60	74.9
2F1	3.09	20.21	3.09	20.21	0.00	46.4
3F1	2.32	14.05	2.32	14.05	0.00	53.3
4F1	2.16	12.97	2.16	12.97	0.00	58.4

5C1	2.42	14.87	2.42	14.87	0.00	97.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00			
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00			
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00			
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00			
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.38	10.11	1.21	11.26	HS 24.12	43.4
HS20	2.29	16.84	2.01	18.77	HS 40.20	72.4
2F1	3.57	25.84	3.13	28.80	0.00	47.0
3F1	2.71	17.96	2.38	20.02	0.00	54.6
4F1	2.60	16.59	2.28	18.49	0.00	61.5
5C1	2.80	19.01	2.45	21.19	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.6	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	2F1	-12.23	6.07	-9.41	4.67	0.00	0.00	0.00	0.00
OPER	3F1	-16.11	7.59	-12.39	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.89	6.25	-12.22	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.60	9.40	-12.00	7.23	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.12	8.29	HS 82.32	148.2
HS20	6.86	13.82	HS 137.20	247.0
2F1	10.69	22.11	0.00	160.3
3F1	8.11	17.66	0.00	186.5
4F1	8.22	21.45	0.00	222.0
5C1	8.38	14.27	0.00	335.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00	
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00	
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00	
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00	
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.26	10.47	1.26	10.47	HS 25.19	45.3
HS20	2.10	17.45	2.10	17.45	HS 41.99	75.6
2F1	3.27	26.78	3.27	26.78	0.00	49.1
3F1	2.48	18.62	2.48	18.62	0.00	57.1
4F1	2.38	17.19	2.38	17.19	0.00	64.2

5C1	2.56	19.70	2.56	19.70	0.00	102.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00			
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00			
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00			
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00			
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.65	14.88	1.45	16.62	HS	52.3
HS20	2.76	24.80	2.42	27.69	HS	87.2
2F1	4.46	38.05	3.92	42.49	0.00	58.8
3F1	3.32	26.45	2.92	29.53	0.00	67.1
4F1	3.31	24.42	2.91	27.27	0.00	78.5
5C1	3.42	28.00	3.01	31.26	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.4	-3.1	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.4	81.5
OPER	172.1	-128.9	135.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	2F1	-14.98	4.08	-11.52	3.14	0.00	0.00	0.00	0.00
OPER	3F1	-20.12	4.17	-15.48	3.21	0.00	0.00	0.00	0.00
OPER	4F1	-20.19	3.43	-15.53	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-19.51	6.32	-15.01	4.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.19	12.47	HS 63.86	114.9
HS20	5.32	20.78	HS 106.43	191.6
2F1	8.61	33.25	0.00	129.1
3F1	6.41	32.57	0.00	147.3
4F1	6.39	39.55	0.00	172.4
5C1	6.61	21.49	0.00	264.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00	
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00	
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00	
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00	
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.52	15.43	1.52	15.43	HS 30.35	54.6
HS20	2.53	25.72	2.53	25.72	HS 50.58	91.0
2F1	4.09	39.46	4.09	39.46	0.00	61.3
3F1	3.05	27.43	3.05	27.43	0.00	70.0
4F1	3.03	25.33	3.03	25.33	0.00	81.9

5C1	3.14	29.03	3.14	29.03	0.00	125.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.6 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00			
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00			
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00			
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00			
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.78	28.83	2.45	32.30	HS 49.05	88.3
HS20	4.63	48.05	4.09	53.84	HS 81.75	147.2
2F1	7.72	73.73	6.82	82.61	0.00	102.3
3F1	5.66	51.25	5.00	57.42	0.00	114.9
4F1	5.53	47.32	4.89	53.02	0.00	132.0
5C1	5.83	54.24	5.14	60.78	0.00	205.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.5
OPER	172.1	-127.2	137.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	2F1	-17.86	2.05	-13.74	1.58	0.00	0.00	0.00	0.00
OPER	3F1	-24.36	2.61	-18.74	2.01	0.00	0.00	0.00	0.00
OPER	4F1	-24.90	2.82	-19.16	2.17	0.00	0.00	0.00	0.00
OPER	5C1	-23.66	4.11	-18.20	3.16	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.56	23.44	HS 51.25	92.3
HS20	4.27	39.06	HS 85.42	153.8
2F1	7.12	66.95	0.00	106.9
3F1	5.22	52.68	0.00	120.1
4F1	5.11	48.82	0.00	137.9
5C1	5.38	33.50	0.00	215.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 10.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00	
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00	
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00	
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00	
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.56	29.93	2.56	29.93	HS 51.11	92.0
HS20	4.26	49.89	4.26	49.89	HS 85.18	153.3
2F1	7.10	76.55	7.10	76.55	0.00	106.6
3F1	5.21	53.21	5.21	53.21	0.00	119.8
4F1	5.09	49.13	5.09	49.13	0.00	137.5

5C1	5.36	56.32	5.36	56.32	0.00	214.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 11.000 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	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	2F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S02	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-75.3	79.9
OPER	172.1	-125.5	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	2F1	-20.82	0.00	-16.01	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.77	0.00	-22.13	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.87	0.00	-22.97	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.99	0.00	-21.53	0.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.11	30.37	HS 42.26	76.1
HS20	3.52	50.62	HS 70.43	126.8
2F1	6.03	999.00	0.00	90.4
3F1	4.36	999.00	0.00	100.3
4F1	4.20	999.00	0.00	113.4
5C1	4.48	999.00	0.00	179.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S02 HS20 HS20
 Check Point I. D. 11.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 0.0 0.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load 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	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.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
2F1	999.00	999.00	999.00	999.00	0.00	999.0
3F1	999.00	999.00	999.00	999.00	0.00	999.0
4F1	999.00	999.00	999.00	999.00	0.00	999.0

5C1	999.00	999.00	999.00	999.00	0.00	999.0
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BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 10

Live Load Distribution Factor 1.272

Second Live Load Dist. Factor 1.272

Comments:

Member I. D. S03 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Length -- Non-Composite:		Section		Section	Hinge Location	
Span No.	Range No.	Range Length	Left	Right	Variation	No. 1 No. 2
1	1	25.000	1	0		0.0 0.0
2	1	25.000	2	0		0.0 0.0
3	1	25.000	2	0		0.0 0.0
4	1	25.000	2	0		0.0 0.0
5	1	25.000	2	0		0.0 0.0
6	1	25.000	2	0		0.0 0.0
7	1	25.000	2	0		0.0 0.0
8	1	25.000	2	0		0.0 0.0
9	1	25.000	2	0		0.0 0.0
10	1	25.000	1	0		0.0 0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	0.000	688.0	688.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	688.0	688.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	688.0	688.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	688.0	688.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	688.0	688.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	688.0	688.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	688.0	688.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	688.0	688.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	688.0	688.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	688.0	688.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

0.0 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	2F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	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	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.7	0.0	6.9
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.0	74.9
OPER	172.1	-140.0	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	HS20	-2.67	35.63	-2.05	27.41	-2.63	27.51	-2.02	21.16
OPER	2F1	-1.81	20.82	-1.40	16.01	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	28.77	-2.01	22.13	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	29.87	-2.17	22.97	0.00	0.00	0.00	0.00
OPER	5C1	-2.30	27.99	-1.77	21.53	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	31.49	2.10	HS 42.01	75.6
HS20	52.48	3.50	HS 70.02	126.0
2F1	77.14	5.99	0.00	89.9
3F1	53.62	4.34	0.00	99.7
4F1	49.69	4.18	0.00	112.8
5C1	60.91	4.46	0.00	178.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

0.0 0.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load 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	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.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.6 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50			
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00		
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00			
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00			
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00			
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00			
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.76	28.97	2.44	32.44	HS 48.80	87.8
HS20	4.61	48.28	4.07	54.07	HS 81.33	146.4
2F1	7.68	74.08	6.78	82.96	0.00	101.7
3F1	5.63	51.49	4.97	57.66	0.00	114.3
4F1	5.51	47.55	4.86	53.24	0.00	131.3
5C1	5.80	54.50	5.12	61.03	0.00	204.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	76.0
OPER	172.1	-138.1	126.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	HS20	-3.29	29.78	-2.53	22.91	-3.52	23.60	-2.71	18.15
OPER	2F1	-2.05	17.86	-1.58	13.74	0.00	0.00	0.00	0.00
OPER	3F1	-2.61	24.36	-2.01	18.74	0.00	0.00	0.00	0.00
OPER	4F1	-2.82	24.90	-2.17	19.16	0.00	0.00	0.00	0.00
OPER	5C1	-4.11	23.66	-3.16	18.20	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.53	2.55	HS 51.03	91.9
HS20	39.22	4.25	HS 85.06	153.1
2F1	67.21	7.09	0.00	106.4
3F1	52.89	5.20	0.00	119.6
4F1	49.02	5.09	0.00	137.3
5C1	33.63	5.35	0.00	214.1

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 1.100

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6

Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	HS20	74.46 L	57.28	-11.50	0.0	46.51	35.77	2.50	
		-6.96 R	-5.35	58.00	0.0	-5.14	-3.96	35.00	0.00
OPER	2F1	44.64 R	34.34	12.50	0.0	0.00	0.00	0.00	
		-4.54 R	-3.49	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 R	46.85	16.50	0.0	0.00	0.00	0.00	
		-6.53 R	-5.02	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 R	47.89	20.50	0.0	0.00	0.00	0.00	
		-7.07 R	-5.44	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 R	45.50	18.50	0.0	0.00	0.00	0.00	
		-6.17 R	-4.74	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	30.07	2.54	30.07	HS 50.85	91.5
HS20	4.24	50.12	4.24	50.12	HS 84.76	152.6
2F1	7.07	76.90	7.07	76.90	0.00	106.0
3F1	5.18	53.45	5.18	53.45	0.00	119.2
4F1	5.07	49.35	5.07	49.35	0.00	136.8

5C1	5.33	56.58	5.33	56.58	0.00	213.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 2.8 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00			
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00		
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00			
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00			
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00			
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00			
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.64	15.00	1.44	16.73	HS 28.81	51.9
HS20	2.73	25.00	2.40	27.89	HS 48.02	86.4
2F1	4.42	38.35	3.88	42.79	0.00	58.2
3F1	3.29	26.66	2.89	29.74	0.00	66.5
4F1	3.28	24.61	2.88	27.46	0.00	77.8
5C1	3.39	28.22	2.98	31.48	0.00	119.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-81.7	77.1
OPER	172.1	-136.2	128.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	HS20	-6.54	24.23	-5.03	18.64	-6.41	19.88	-4.93	15.29
OPER	2F1	-4.08	14.98	-3.14	11.52	0.00	0.00	0.00	0.00
OPER	3F1	-4.17	20.12	-3.21	15.48	0.00	0.00	0.00	0.00
OPER	4F1	-3.43	20.19	-2.64	15.53	0.00	0.00	0.00	0.00
OPER	5C1	-6.32	19.51	-4.86	15.01	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.50	3.18	HS 63.68	114.6
HS20	20.84	5.31	HS 106.13	191.0
2F1	33.34	8.58	0.00	128.7
3F1	32.65	6.39	0.00	146.9
4F1	39.65	6.37	0.00	171.9
5C1	21.55	6.59	0.00	263.6

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 1.200

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	HS20	121.14 L	93.18	-9.00	0.0	79.47	61.13	5.00	
		-13.92 R	-10.71	58.00	0.0	-10.29	-7.91	35.00	0.00
OPER	2F1	74.91 R	57.62	15.00	0.0	0.00	0.00	0.00	
		-9.07 R	-6.98	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 R	77.40	19.00	0.0	0.00	0.00	0.00	
		-13.05 R	-10.04	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 R	77.66	23.00	0.0	0.00	0.00	0.00	
		-14.14 R	-10.87	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 R	75.04	21.00	0.0	0.00	0.00	0.00	
		-12.33 R	-9.49	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	15.55	1.50	15.55	HS 30.08	54.1
HS20	2.51	25.91	2.51	25.91	HS 50.13	90.2
2F1	4.05	39.76	4.05	39.76	0.00	60.8
3F1	3.02	27.64	3.02	27.64	0.00	69.4
4F1	3.01	25.52	3.01	25.52	0.00	81.2

5C1	3.11	29.25	3.11	29.25	0.00	124.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 32.2

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.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50			
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00		
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00			
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00			
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00			
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00			
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.36	10.20	1.19	11.36
HS20	2.27	17.01	1.99	18.93
2F1	3.53	26.09	3.09	29.05
3F1	2.68	18.14	2.35	20.19
4F1	2.57	16.75	2.25	18.65
5C1	2.77	19.20	2.42	21.37

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	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.7
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.6	78.3
OPER	172.1	-134.3	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	HS20	-9.71	19.04	-7.47	14.65	-9.39	16.39	-7.22	12.61
OPER	2F1	-6.07	12.23	-4.67	9.41	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	16.11	-5.84	12.39	0.00	0.00	0.00	0.00
OPER	4F1	-6.25	15.89	-4.81	12.22	0.00	0.00	0.00	0.00
OPER	5C1	-9.40	15.60	-7.23	12.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.30	4.11	HS 82.21	148.0
HS20	13.83	6.85	HS 137.01	246.6
2F1	22.14	10.67	0.00	160.1
3F1	17.68	8.10	0.00	186.2
4F1	21.47	8.21	0.00	221.7
5C1	14.29	8.36	0.00	334.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	HS20	142.83 L	109.87	-6.50	0.0	101.42	78.01	7.50	
		-20.88 R	-16.06	58.00	0.0	-15.43	-11.87	35.00	0.00
OPER	2F1	91.71 R	70.54	17.50	0.0	0.00	0.00	0.00	
		-13.61 R	-10.47	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 R	92.95	21.50	0.0	0.00	0.00	0.00	
		-19.58 R	-15.06	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 R	97.01	21.50	0.0	0.00	0.00	0.00	
		-21.21 R	-16.31	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 R	89.99	23.50	0.0	0.00	0.00	0.00	
		-18.50 R	-14.23	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.25	10.57	1.25	10.57	HS 24.91	44.8
HS20	2.08	17.62	2.08	17.62	HS 41.52	74.7
2F1	3.23	27.03	3.23	27.03	0.00	48.5
3F1	2.45	18.79	2.45	18.79	0.00	56.4
4F1	2.35	17.35	2.35	17.35	0.00	63.5

5C1	2.53	19.89	2.53	19.89	0.00	101.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 1.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 3.7 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00			
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00		
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00			
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00			
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00			
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00			
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.35	7.70	1.18	8.57	HS 23.59	42.5
HS20	2.25	12.84	1.97	14.29	HS 39.31	70.8
2F1	3.34	19.70	2.92	21.92	0.00	43.8
3F1	2.50	13.69	2.19	15.24	0.00	50.4
4F1	2.34	12.64	2.04	14.07	0.00	55.2
5C1	2.62	14.49	2.29	16.13	0.00	91.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	HS20	-12.76	14.31	-9.82	11.01	-12.43	13.14	-9.56	10.11
OPER	2F1	-7.97	9.63	-6.13	7.41	0.00	0.00	0.00	0.00
OPER	3F1	-10.92	12.38	-8.40	9.53	0.00	0.00	0.00	0.00
OPER	4F1	-10.15	11.80	-7.81	9.08	0.00	0.00	0.00	0.00
OPER	5C1	-12.27	12.15	-9.44	9.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.22	5.55	HS 110.98	199.8
HS20	10.37	9.25	HS 184.97	332.9
2F1	16.60	13.74	0.00	206.2
3F1	12.12	10.69	0.00	245.9
4F1	13.05	11.22	0.00	302.9
5C1	10.79	10.89	0.00	431.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	HS20	143.13 L	110.10	-4.00	0.0	110.70	85.15	10.00	
		-27.84 R	-21.42	58.00	0.0	-20.57	-15.82	35.00	0.00
OPER	2F1	96.32 R	74.09	20.00	0.0	0.00	0.00	0.00	
		-18.15 R	-13.96	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 R	98.84	20.00	0.0	0.00	0.00	0.00	
		-26.11 R	-20.08	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 R	105.92	24.00	0.0	0.00	0.00	0.00	
		-28.27 R	-21.75	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 R	94.48	22.00	0.0	0.00	0.00	0.00	
		-24.67 R	-18.97	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.23	7.98	1.23	7.98	HS 24.66	44.4
HS20	2.06	13.30	2.06	13.30	HS 41.10	74.0
2F1	3.05	20.41	3.05	20.41	0.00	45.8
3F1	2.29	14.18	2.29	14.18	0.00	52.6
4F1	2.14	13.10	2.14	13.10	0.00	57.7

5C1	2.39	15.01	2.39	15.01	0.00	95.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	35.20	35.20	2.861
			999999.000
			89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 32.2

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.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50			
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00		
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00			
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00			
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00			
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00			
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.44	6.12	1.26	6.82	HS 25.22	45.4
HS20	2.40	10.20	2.10	11.36	HS 42.03	75.7
2F1	3.51	15.66	3.08	17.43	0.00	46.2
3F1	2.58	10.88	2.26	12.12	0.00	51.9
4F1	2.42	10.05	2.12	11.19	0.00	57.2
5C1	2.70	11.52	2.36	12.82	0.00	94.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	HS20	-16.77	10.80	-12.90	8.31	-15.50	10.18	-11.92	7.83
OPER	2F1	-10.81	7.23	-8.32	5.56	0.00	0.00	0.00	0.00
OPER	3F1	-14.12	9.00	-10.86	6.92	0.00	0.00	0.00	0.00
OPER	4F1	-14.21	8.23	-10.93	6.33	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.33	-11.52	7.18	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.67	7.46	HS 93.38	168.1
HS20	7.78	12.43	HS 155.63	280.1
2F1	12.06	18.57	0.00	181.0
3F1	9.24	14.93	0.00	212.5
4F1	9.18	16.31	0.00	248.0
5C1	8.71	14.40	0.00	348.5

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 1.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5

Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	HS20	134.99 L	103.84	-15.50	0.0	110.27	84.83	12.50	
		-34.80 R	-26.77	58.00	0.0	-25.71	-19.78	35.00	0.00
OPER	2F1	92.20 L	70.92	2.50	0.0	0.00	0.00	0.00	
		-22.68 R	-17.45	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 R	96.79	22.50	0.0	0.00	0.00	0.00	
		-32.63 R	-25.10	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 L	102.96	-1.50	0.0	0.00	0.00	0.00	
		-35.34 R	-27.19	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 R	92.36	24.50	0.0	0.00	0.00	0.00	
		-30.83 R	-23.72	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.32	6.34	1.32	6.34	HS 26.36	47.4
HS20	2.20	10.57	2.20	10.57	HS 43.93	79.1
2F1	3.22	16.22	3.22	16.22	0.00	48.2
3F1	2.36	11.27	2.36	11.27	0.00	54.2
4F1	2.21	10.41	2.21	10.41	0.00	59.8

5C1	2.47	11.93	2.47	11.93	0.00	98.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00			
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00		
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00			
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00			
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00			
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00			
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.55	4.99	1.36	5.57	HS 27.26	49.1
HS20	2.59	8.32	2.27	9.29	HS 45.44	81.8
2F1	3.83	12.77	3.36	14.25	0.00	50.4
3F1	2.97	8.88	2.61	9.91	0.00	60.0
4F1	2.77	8.20	2.43	9.15	0.00	65.6
5C1	3.02	9.40	2.65	10.49	0.00	106.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.1	81.8
OPER	172.1	-128.4	136.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	HS20	-20.25	6.78	-15.58	5.22	-18.55	7.51	-14.27	5.78
OPER	2F1	-13.52	5.06	-10.40	3.89	0.00	0.00	0.00	0.00
OPER	3F1	-17.64	6.00	-13.57	4.62	0.00	0.00	0.00	0.00
OPER	4F1	-18.09	5.13	-13.92	3.94	0.00	0.00	0.00	0.00
OPER	5C1	-17.52	6.97	-13.48	5.36	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.81	10.89	HS 76.12	137.0
HS20	6.34	18.15	HS 126.87	228.4
2F1	9.50	26.94	0.00	142.5
3F1	7.28	22.70	0.00	167.4
4F1	7.10	26.58	0.00	191.7
5C1	7.33	19.54	0.00	293.2

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 1.600

Dead Load Moment 2.8

Superimposed Dead Load Moment 25.4

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	HS20	128.16 L	98.59	-13.00	0.0	98.93	76.10	15.00	
		-41.77 R	-32.13	58.00	0.0	-30.86	-23.74	35.00	0.00
OPER	2F1	86.60 L	66.61	5.00	0.0	0.00	0.00	0.00	
		-27.22 R	-20.94	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 L	85.89	5.00	0.0	0.00	0.00	0.00	
		-39.16 R	-30.12	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 L	92.22	1.00	0.0	0.00	0.00	0.00	
		-42.41 R	-32.62	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 L	84.43	3.00	0.0	0.00	0.00	0.00	
		-37.00 R	-28.46	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.42	5.18	1.42	5.18	HS 28.46	51.2
HS20	2.37	8.63	2.37	8.63	HS 47.43	85.4
2F1	3.51	13.24	3.51	13.24	0.00	52.6
3F1	2.72	9.20	2.72	9.20	0.00	62.6
4F1	2.54	8.50	2.54	8.50	0.00	68.5

5C1	2.77	9.74	2.77	9.74	0.00	110.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	35.20	35.20	2.861
			999999.000
			89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.7 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50			
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00		
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00			
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00			
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00			
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00			
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	4.13	1.64	4.63
HS20	3.10	6.89	2.74	7.71
2F1	4.88	10.56	4.31	11.83
3F1	3.78	7.34	3.33	8.22
4F1	3.68	6.78	3.25	7.59
5C1	3.81	7.77	3.36	8.70

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.	1.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.9	82.9
OPER	172.1	-126.5	138.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	HS20	-25.94	3.36	-19.95	2.58	-21.53	5.16	-16.56	3.97
OPER	2F1	-16.05	3.16	-12.35	2.43	0.00	0.00	0.00	0.00
OPER	3F1	-21.68	3.43	-16.68	2.64	0.00	0.00	0.00	0.00
OPER	4F1	-22.18	2.52	-17.06	1.94	0.00	0.00	0.00	0.00
OPER	5C1	-20.67	4.78	-15.90	3.68	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.93	16.07	HS 58.55	105.4
HS20	4.88	26.78	HS 97.58	175.6
2F1	7.88	43.69	0.00	118.2
3F1	5.84	40.27	0.00	134.2
4F1	5.71	54.90	0.00	154.1
5C1	6.12	28.92	0.00	244.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	HS20	110.76 L	85.20	-10.50	0.0	80.07	61.59	17.50	
		-48.73 R	-37.48	58.00	0.0	-37.62	-28.94	35.00	85.00
OPER	2F1	70.45 L	54.19	7.50	0.0	0.00	0.00	0.00	
		-31.76 R	-24.43	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 L	70.03	3.50	0.0	0.00	0.00	0.00	
		-45.69 R	-35.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 L	71.80	3.50	0.0	0.00	0.00	0.00	
		-49.48 R	-38.06	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 R	69.39	64.50	0.0	0.00	0.00	0.00	
		-43.16 R	-33.20	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.71	4.29	1.71	4.29	HS 34.25	61.7
HS20	2.85	7.15	2.85	7.15	HS 57.09	102.8
2F1	4.49	10.97	4.49	10.97	0.00	67.3
3F1	3.47	7.62	3.47	7.62	0.00	79.9
4F1	3.39	7.04	3.39	7.04	0.00	91.4

5C1	3.51	8.07	3.51	8.07	0.00	140.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00			
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00		
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00			
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00			
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00			
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00			
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.04	3.43	2.70	3.87	HS 54.00	97.2
HS20	5.07	5.72	4.50	6.44	HS 90.00	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	130.0
4F1	6.81	5.63	6.05	6.34	0.00	152.1
5C1	5.53	6.46	4.92	7.27	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-74.8	84.1
OPER	172.1	-124.6	140.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	HS20	-31.40	1.08	-24.15	0.83	-24.42	3.15	-18.78	2.42
OPER	2F1	-18.38	1.56	-14.14	1.20	0.00	0.00	0.00	0.00
OPER	3F1	-25.44	1.30	-19.57	1.00	0.00	0.00	0.00	0.00
OPER	4F1	-26.13	0.75	-20.10	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-24.15	2.80	-18.58	2.15	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	26.70	HS 47.63	85.7
HS20	3.97	44.51	HS 79.38	142.9
2F1	6.78	89.54	0.00	101.7
3F1	4.90	107.84	0.00	112.7
4F1	4.77	185.62	0.00	128.8
5C1	5.16	50.01	0.00	206.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	HS20	71.18 L	54.76	-8.00	0.0	52.92	40.70	20.00	
		-55.69 R	-42.84	58.00	0.0	-42.99	-33.07	35.00	85.00
OPER	2F1	45.75 L	35.19	10.00	0.0	0.00	0.00	0.00	
		-36.29 R	-27.92	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 L	43.60	6.00	0.0	0.00	0.00	0.00	
		-52.21 R	-40.16	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 L	40.72	2.00	0.0	0.00	0.00	0.00	
		-56.55 R	-43.50	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 R	50.13	67.00	0.0	0.00	0.00	0.00	
		-49.33 R	-37.95	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.81	3.57	2.81	3.57	HS 56.16	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.59	168.5
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.34	5.88	6.34	0.00	135.2
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1	5.11	6.72	5.11	6.72	0.00	204.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	35.20	35.20	2.861
			999999.000
			89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.0 -20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50			
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00		
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00			
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00			
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00			
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00			
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	8.73	2.58	7.81	2.93	HS 51.60	92.9
HS20	14.55	4.30	13.02	4.88	HS 85.99	154.8
2F1	25.70	7.27	22.99	8.26	0.00	109.0
3F1	24.29	5.05	21.73	5.74	0.00	116.2
4F1	22.75	4.66	20.36	5.30	0.00	126.0
5C1	11.68	5.13	10.45	5.82	0.00	205.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	1.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-73.6	85.2
OPER	172.1	-122.7	142.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	HS20	-36.40	0.71	-28.00	0.55	-27.15	1.49	-20.89	1.15
OPER	2F1	-20.47	0.49	-15.74	0.37	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	0.70	-22.21	0.54	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	0.75	-23.39	0.58	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	1.11	-21.09	0.85	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.02	57.06	HS 40.46	72.8
HS20	3.37	95.10	HS 67.44	121.4
2F1	6.00	292.07	0.00	89.9
3F1	4.25	203.01	0.00	97.8
4F1	4.04	188.14	0.00	109.0
5C1	4.48	127.80	0.00	179.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 1.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	HS20	13.98 R	10.75	88.00	0.0	26.28	20.21	22.50	
		-69.02 L	-53.10	16.00	0.0	-64.36	-49.51	35.00	10.00
OPER	2F1	14.88 L	11.44	12.50	0.0	0.00	0.00	0.00	
		-40.83 R	-31.41	42.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 R	12.11	70.00	0.0	0.00	0.00	0.00	
		-58.74 R	-45.18	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 R	12.93	74.00	0.0	0.00	0.00	0.00	
		-63.62 R	-48.94	48.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 R	25.18	69.50	0.0	0.00	0.00	0.00	
		-57.88 L	-44.52	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.10	2.69	8.10	2.69	HS 53.82	96.9
HS20	13.50	4.49	13.50	4.49	HS 89.69	161.5
2F1	23.85	7.58	23.85	7.58	0.00	113.7
3F1	22.55	5.27	22.55	5.27	0.00	121.2
4F1	21.12	4.87	21.12	4.87	0.00	131.4

5C1	10.84	5.35	10.84	5.35	0.00	213.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00		
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00			
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00			
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00			
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00			
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.25	1.14	10.22	1.30	HS 22.77	41.0
HS20	18.75	1.90	17.04	2.17	HS 37.95	68.3
2F1	28.77	4.39	26.14	5.03	0.00	65.9
3F1	20.00	2.93	18.17	3.36	0.00	67.5
4F1	18.47	2.43	16.78	2.79	0.00	65.7
5C1	24.15	2.68	21.94	3.07	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	HS20	-36.40	38.90	-28.00	29.92	-27.15	29.41	-20.89	22.63
OPER	2F1	-20.47	21.85	-15.74	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-28.87	30.77	-22.21	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-30.41	32.52	-23.39	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-27.42	29.85	-21.09	22.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.77	1.64	HS 32.83	59.1
HS20	2.96	2.74	HS 54.71	98.5
2F1	5.43	4.87	0.00	73.0
3F1	3.79	3.46	0.00	79.5
4F1	3.52	3.27	0.00	88.4
5C1	3.97	3.57	0.00	142.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.57	1.19	10.57	1.19	HS 23.89	43.0
HS20	17.61	1.99	17.61	1.99	HS 39.81	71.7
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	28.67	28.67	1.699
			999999.000
			83.109

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00			
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00		35.00	
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00		0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00		0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00		0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00		0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.25	1.14	10.22	1.30	HS 22.77	41.0
HS20	18.75	1.90	17.04	2.17	HS 37.95	68.3
2F1	28.77	4.39	26.14	5.03	0.00	65.9
3F1	20.00	2.93	18.17	3.36	0.00	67.5
4F1	18.47	2.43	16.78	2.79	0.00	65.7
5C1	24.15	2.68	21.94	3.07	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-10.4	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	HS20	-40.86	38.90	-31.43	29.92	-29.69	29.41	-22.84	22.63
OPER	2F1	-22.27	21.85	-17.13	16.81	0.00	0.00	0.00	0.00
OPER	3F1	-31.91	30.77	-24.55	23.67	0.00	0.00	0.00	0.00
OPER	4F1	-34.28	32.52	-26.37	25.01	0.00	0.00	0.00	0.00
OPER	5C1	-30.41	29.85	-23.39	22.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.77	1.64	HS 32.83	59.1
HS20	2.96	2.74	HS 54.71	98.5
2F1	5.43	4.87	0.00	73.0
3F1	3.79	3.46	0.00	79.5
4F1	3.52	3.27	0.00	88.4
5C1	3.97	3.57	0.00	142.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 2.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	HS20	18.65 R	14.35	83.00	0.0	13.78	10.60	60.00	
		-115.68 L	-88.99	4.50	0.0	-106.66	-82.05	15.00	35.00
OPER	2F1	12.16 R	9.35	67.50	0.0	0.00	0.00	0.00	
		-49.96 L	-38.43	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 R	13.45	70.00	0.0	0.00	0.00	0.00	
		-74.79 R	-57.53	29.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 R	14.57	73.00	0.0	0.00	0.00	0.00	
		-90.16 R	-69.35	30.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 R	11.14	109.50	0.0	0.00	0.00	0.00	
		-81.93 L	-63.02	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.57	1.19	10.57	1.19	HS 23.89	43.0
HS20	17.61	1.99	17.61	1.99	HS 39.81	71.7
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.6 -24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50			
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50		
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	0.00		
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	0.00		
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	0.00		
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	0.00		
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	8.21	1.92	7.41	2.17	HS 38.42	69.2
HS20	13.68	3.20	12.34	3.62	HS 64.04	115.3
2F1	22.71	5.55	20.49	6.28	0.00	83.2
3F1	30.66	3.86	27.66	4.37	0.00	88.7
4F1	32.84	3.57	29.63	4.04	0.00	96.3
5C1	13.67	3.95	12.34	4.48	0.00	158.2

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03 HS20 HS20
Check Point I. D. 2.100 2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.7 0.0 7.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.7	65.0
OPER	151.3	-124.4	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	HS20	-3.33	33.68	-2.56	25.90	-3.33	26.57	-2.56	20.44
OPER	2F1	-2.27	19.49	-1.74	14.99	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	27.06	-2.51	20.81	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	28.06	-2.71	21.59	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	26.19	-2.71	20.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.40	1.93	HS 38.59	69.5
HS20	37.33	3.22	HS 64.32	115.8
2F1	54.89	5.56	0.00	83.4
3F1	38.16	4.00	0.00	92.1
4F1	35.36	3.86	0.00	104.2
5C1	35.35	4.14	0.00	165.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.6 -24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 151.7	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
OPER 252.8	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	HS20	16.91 R	13.01	55.50	0.0	23.92	18.40	27.50	
		-75.60 R	-58.15	34.00	0.0	-65.20	-50.15	15.00	37.50
OPER	2F1	14.41 R	11.08	37.50	0.0	0.00	0.00	0.00	
		-43.62 L	-33.56	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 R	8.21	41.50	0.0	0.00	0.00	0.00	
		-62.75 L	-48.27	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 R	7.67	74.00	0.0	0.00	0.00	0.00	
		-67.84 L	-52.18	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 R	18.41	78.50	0.0	0.00	0.00	0.00	
		-61.22 L	-47.09	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.68	2.01	7.68	2.01	HS 40.13	72.2
HS20	12.79	3.34	12.79	3.34	HS 66.88	120.4
2F1	21.24	5.80	21.24	5.80	0.00	86.9
3F1	28.67	4.03	28.67	4.03	0.00	92.7
4F1	30.71	3.73	30.71	3.73	0.00	100.6

5C1	12.78	4.13	12.78	4.13	0.00	165.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.0 -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	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00			
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50		
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00			
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00			
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00			
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00			
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.85	2.52	2.56	2.83	HS 50.35	90.6
HS20	4.75	4.20	4.26	4.71	HS 83.91	151.0
2F1	7.35	6.97	6.59	7.83	0.00	98.9
3F1	6.05	4.84	5.43	5.44	0.00	111.4
4F1	6.57	4.48	5.89	5.03	0.00	121.0
5C1	5.99	5.21	5.37	5.85	0.00	208.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	HS20	-3.33	28.40	-2.56	21.85	-4.67	23.46	-3.59	18.05
OPER	2F1	-2.27	17.02	-1.74	13.09	0.00	0.00	0.00	0.00
OPER	3F1	-3.26	23.17	-2.51	17.82	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	23.81	-2.71	18.32	0.00	0.00	0.00	0.00
OPER	5C1	-5.27	22.39	-4.06	17.22	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.76	2.33	HS 46.55	83.8
HS20	26.27	3.88	HS 77.58	139.6
2F1	54.06	6.47	0.00	97.1
3F1	37.58	4.76	0.00	109.4
4F1	34.83	4.63	0.00	124.9
5C1	23.24	4.92	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.0 -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	HS20	65.10 R	50.07	58.00	0.0	45.48	34.99	30.00	
		-61.95 L	-47.65	-8.00	0.0	-41.68	-32.06	15.00	47.50
OPER	2F1	42.08 R	32.37	40.00	0.0	0.00	0.00	0.00	
		-37.29 L	-28.68	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 R	39.34	44.00	0.0	0.00	0.00	0.00	
		-53.64 L	-41.26	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 R	36.23	44.00	0.0	0.00	0.00	0.00	
		-57.99 L	-44.60	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 R	39.74	81.00	0.0	0.00	0.00	0.00	
		-49.89 L	-38.38	3.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.66	2.62	2.66	2.62	HS 52.43	94.4
HS20	4.43	4.37	4.43	4.37	HS 87.38	157.3
2F1	6.85	7.26	6.85	7.26	0.00	102.7
3F1	5.64	5.05	5.64	5.05	0.00	116.1
4F1	6.12	4.67	6.12	4.67	0.00	126.0

5C1	5.58	5.43	5.58	5.43	0.00	217.0
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50			
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00		
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00			
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00			
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00			
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00			
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	3.19	1.66	3.56	HS 33.24	59.8
HS20	3.11	5.31	2.77	5.93	HS 55.39	99.7
2F1	4.76	8.82	4.24	9.85	0.00	63.6
3F1	3.74	6.13	3.34	6.85	0.00	76.8
4F1	3.65	5.67	3.25	6.34	0.00	87.9
5C1	3.98	6.16	3.55	6.88	0.00	142.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	HS20	-4.84	23.00	-3.73	17.69	-7.19	20.18	-5.53	15.53
OPER	2F1	-3.98	14.36	-3.06	11.04	0.00	0.00	0.00	0.00
OPER	3F1	-4.27	19.12	-3.28	14.71	0.00	0.00	0.00	0.00
OPER	4F1	-3.52	19.55	-2.71	15.04	0.00	0.00	0.00	0.00
OPER	5C1	-7.32	18.72	-5.63	14.40	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.08	2.92	HS 58.47	105.2
HS20	16.80	4.87	HS 97.45	175.4
2F1	30.34	7.80	0.00	117.1
3F1	28.27	5.86	0.00	134.8
4F1	34.29	5.73	0.00	154.7
5C1	16.48	5.99	0.00	239.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	HS20	95.41 R	73.39	60.50	0.0	68.82	52.94	32.50	
		-51.42 L	-39.56	-8.00	0.0	-36.28	-27.90	15.00	0.00
OPER	2F1	62.30 R	47.93	42.50	0.0	0.00	0.00	0.00	
		-30.95 L	-23.81	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 R	60.84	46.50	0.0	0.00	0.00	0.00	
		-44.53 L	-34.25	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 R	62.46	46.50	0.0	0.00	0.00	0.00	
		-48.14 L	-37.03	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 R	57.19	48.50	0.0	0.00	0.00	0.00	
		-44.33 L	-34.10	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.73	3.31	1.73	3.31	HS 34.59	62.3
HS20	2.88	5.52	2.88	5.52	HS 57.65	103.8
2F1	4.41	9.17	4.41	9.17	0.00	66.2
3F1	3.48	6.37	3.48	6.37	0.00	80.0
4F1	3.39	5.90	3.39	5.90	0.00	91.4

5C1	3.70	6.40	3.70	6.40	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 12.0

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	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00			
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00		
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00			
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00			
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00			
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	4.13	1.43	4.60	HS 28.58	51.5
HS20	2.68	6.88	2.38	7.66	HS 47.64	85.8
2F1	3.92	11.43	3.48	12.73	0.00	52.3
3F1	3.07	7.95	2.73	8.85	0.00	62.7
4F1	2.86	7.35	2.54	8.19	0.00	68.6
5C1	3.19	6.96	2.84	7.75	0.00	113.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.3	68.4
OPER	151.3	-118.8	113.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	HS20	-9.92	18.91	-7.63	14.54	-10.04	16.86	-7.73	12.97
OPER	2F1	-6.29	11.62	-4.84	8.94	0.00	0.00	0.00	0.00
OPER	3F1	-7.48	15.07	-5.75	11.59	0.00	0.00	0.00	0.00
OPER	4F1	-6.33	15.06	-4.87	11.58	0.00	0.00	0.00	0.00
OPER	5C1	-9.64	15.88	-7.41	12.22	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	3.62	HS 72.31	130.2
HS20	11.83	6.03	HS 120.51	216.9
2F1	18.90	9.81	0.00	147.1
3F1	15.89	7.56	0.00	173.9
4F1	18.78	7.57	0.00	204.3
5C1	12.33	7.17	0.00	286.9

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 2.400

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	HS20	107.38 R	82.60	63.00	0.0	83.25	64.04	35.00	
		-40.90 L	-31.46	-8.00	0.0	-31.67	-24.36	15.00	0.00
OPER	2F1	73.40 R	56.46	45.00	0.0	0.00	0.00	0.00	
		-24.62 L	-18.94	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 R	72.19	45.00	0.0	0.00	0.00	0.00	
		-35.41 L	-27.24	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 R	77.45	49.00	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 R	69.37	47.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	4.29	1.49	4.29	HS 29.79	53.6
HS20	2.48	7.15	2.48	7.15	HS 49.64	89.4
2F1	3.63	11.87	3.63	11.87	0.00	54.5
3F1	2.84	8.25	2.84	8.25	0.00	65.3
4F1	2.65	7.63	2.65	7.63	0.00	71.5

5C1	2.96	7.23	2.96	7.23	0.00	118.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.2 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	HS20	105.00	L	80.77	23.50	0.0	89.43	68.79	37.50		
		-30.38	L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00	
OPER	2F1	74.76	R	57.51	47.50	0.0	0.00	0.00	0.00		
		-18.29	L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	99.90	L	76.84	27.50	0.0	0.00	0.00	0.00		
		-26.30	L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.34	R	80.26	51.50	0.0	0.00	0.00	0.00		
		-28.44	L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.34	R	73.34	88.50	0.0	0.00	0.00	0.00		
		-38.29	L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.62	5.64	1.44	6.27	HS 28.80	51.8
HS20	2.70	9.39	2.40	10.44	HS 48.00	86.4
2F1	3.80	15.60	3.37	17.35	0.00	50.6
3F1	2.84	10.85	2.52	12.06	0.00	58.0
4F1	2.72	10.03	2.41	11.16	0.00	65.2
5C1	2.98	7.45	2.64	8.29	0.00	105.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	0.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	HS20	-14.56	14.79	-11.20	11.38	-13.16	13.59	-10.12	10.45
OPER	2F1	-8.83	8.91	-6.80	6.86	0.00	0.00	0.00	0.00
OPER	3F1	-11.07	11.18	-8.52	8.60	0.00	0.00	0.00	0.00
OPER	4F1	-10.32	10.46	-7.94	8.04	0.00	0.00	0.00	0.00
OPER	5C1	-12.17	12.98	-9.36	9.99	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.82	4.70	HS 93.95	169.1
HS20	8.03	7.83	HS 156.59	281.9
2F1	13.24	12.99	0.00	194.9
3F1	10.56	10.36	0.00	238.2
4F1	11.33	11.07	0.00	299.0
5C1	9.61	8.92	0.00	356.8

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 2.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	HS20	105.00 L	80.77	23.50	0.0	89.43	68.79	37.50	
		-30.38 L	-23.37	-8.00	0.0	-27.07	-20.82	15.00	0.00
OPER	2F1	74.76 R	57.51	47.50	0.0	0.00	0.00	0.00	
		-18.29 L	-14.07	7.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 L	76.84	27.50	0.0	0.00	0.00	0.00	
		-26.30 L	-20.23	5.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 R	80.26	51.50	0.0	0.00	0.00	0.00	
		-28.44 L	-21.87	2.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 R	73.34	88.50	0.0	0.00	0.00	0.00	
		-38.29 L	-29.45	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	5.85	1.50	5.85	HS 30.03	54.1
HS20	2.50	9.74	2.50	9.74	HS 50.05	90.1
2F1	3.52	16.19	3.52	16.19	0.00	52.7
3F1	2.63	11.26	2.63	11.26	0.00	60.5
4F1	2.52	10.41	2.52	10.41	0.00	68.0

5C1	2.76	7.73	2.76	7.73	0.00	110.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00			
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00		
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00			
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00			
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00			
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00			
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.60	5.08	1.42	5.66	HS 28.36	51.0
HS20	2.66	8.47	2.36	9.43	HS 47.26	85.1
2F1	3.88	13.00	3.44	14.46	0.00	51.6
3F1	3.03	9.04	2.69	10.05	0.00	61.8
4F1	2.82	8.34	2.51	9.28	0.00	67.6
5C1	3.06	7.48	2.72	8.32	0.00	108.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.0	70.7
OPER	151.3	-114.9	117.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	HS20	-18.64	10.15	-14.34	7.81	-16.43	10.47	-12.64	8.05
OPER	2F1	-11.53	6.35	-8.87	4.89	0.00	0.00	0.00	0.00
OPER	3F1	-14.95	7.59	-11.50	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-14.93	6.49	-11.48	4.99	0.00	0.00	0.00	0.00
OPER	5C1	-14.92	10.51	-11.48	8.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.70	6.75	HS 74.00	133.2
HS20	6.17	11.26	HS 123.33	222.0
2F1	9.97	18.54	0.00	149.5
3F1	7.69	15.52	0.00	176.8
4F1	7.70	18.15	0.00	207.9
5C1	7.70	11.21	0.00	308.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.1 14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	HS20	107.17 L	82.44	12.00	0.0	84.82	65.25	40.00	
		-33.53 R	-25.79	83.00	0.0	-29.61	-22.78	60.00	0.00
OPER	2F1	73.61 L	56.63	30.00	0.0	0.00	0.00	0.00	
		-21.85 R	-16.81	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 L	72.48	30.00	0.0	0.00	0.00	0.00	
		-31.43 R	-24.18	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 L	77.76	26.00	0.0	0.00	0.00	0.00	
		-34.05 R	-26.19	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 L	71.70	28.00	0.0	0.00	0.00	0.00	
		-37.97 R	-29.21	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	5.28	1.48	5.28	HS 29.56	53.2
HS20	2.46	8.79	2.46	8.79	HS 49.27	88.7
2F1	3.59	13.49	3.59	13.49	0.00	53.8
3F1	2.80	9.38	2.80	9.38	0.00	64.4
4F1	2.61	8.66	2.61	8.66	0.00	70.5

5C1	2.83	7.76	2.83	7.76	0.00	113.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50			
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00		
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00			
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00			
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00			
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00			
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.41	HS 32.43	58.4
HS20	3.04	6.59	2.70	7.34	HS 54.05	97.3
2F1	4.64	10.11	4.13	11.27	0.00	61.9
3F1	3.65	7.03	3.25	7.83	0.00	74.7
4F1	3.55	6.49	3.16	7.23	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.1	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	HS20	-22.82	5.07	-17.55	3.90	-19.76	7.59	-15.20	5.84
OPER	2F1	-14.27	4.03	-10.98	3.10	0.00	0.00	0.00	0.00
OPER	3F1	-18.99	4.39	-14.61	3.38	0.00	0.00	0.00	0.00
OPER	4F1	-19.42	3.93	-14.94	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-18.31	8.12	-14.09	6.25	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.97	9.46	HS 59.45	107.0
HS20	4.95	15.76	HS 99.08	178.4
2F1	7.92	29.66	0.00	118.8
3F1	5.95	27.25	0.00	136.9
4F1	5.82	30.49	0.00	157.2
5C1	6.18	14.74	0.00	247.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.7
 Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	HS20	95.90 L	73.77	14.50	0.0	71.92	55.32	42.50	
		-42.22 R	-32.48	83.00	0.0	-33.47	-25.75	60.00	0.00
OPER	2F1	62.78 L	48.29	32.50	0.0	0.00	0.00	0.00	
		-27.52 R	-21.17	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 L	61.35	28.50	0.0	0.00	0.00	0.00	
		-39.59 R	-30.45	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 L	63.03	28.50	0.0	0.00	0.00	0.00	
		-42.88 R	-32.98	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 R	61.89	89.50	0.0	0.00	0.00	0.00	
		-40.50 R	-31.16	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.69	4.11	1.69	4.11	HS 33.78	60.8
HS20	2.82	6.84	2.82	6.84	HS 56.30	101.3
2F1	4.30	10.50	4.30	10.50	0.00	64.5
3F1	3.38	7.30	3.38	7.30	0.00	77.8
4F1	3.29	6.74	3.29	6.74	0.00	89.0

5C1	3.36	7.13	3.36	7.13	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.800

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00			
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00		
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00			
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00			
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.92	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.54	146.8
2F1	7.06	8.06	6.31	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.46	6.68	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	HS20	-28.19	4.05	-21.69	3.12	-23.05	5.05	-17.73	3.88
OPER	2F1	-16.94	2.53	-13.03	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-23.05	3.64	-17.73	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-23.67	3.93	-18.20	3.02	0.00	0.00	0.00	0.00
OPER	5C1	-21.87	5.87	-16.82	4.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.37	14.44	HS 47.32	85.2
HS20	3.94	24.07	HS 78.87	142.0
2F1	6.56	47.97	0.00	98.5
3F1	4.82	33.35	0.00	110.9
4F1	4.70	30.97	0.00	126.8
5C1	5.08	20.70	0.00	203.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 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 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	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	HS20	66.18 L	50.90	17.00	0.0	50.41	38.78	45.00	
		-50.92 R	-39.17	83.00	0.0	-39.34	-30.26	60.00	110.00
OPER	2F1	42.73 L	32.87	35.00	0.0	0.00	0.00	0.00	
		-33.19 R	-25.53	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 L	40.09	31.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 L	36.93	31.00	0.0	0.00	0.00	0.00	
		-51.71 R	-39.77	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 R	46.58	92.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.87	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.79	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -15.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50			
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50		
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00			
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00			
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00			
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00			
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.72	2.31	6.04	2.60	HS 46.09	83.0
HS20	11.19	3.84	10.06	4.33	HS 76.82	138.3
2F1	21.03	6.49	18.91	7.31	0.00	97.4
3F1	21.17	4.51	19.04	5.08	0.00	103.8
4F1	19.83	4.17	17.83	4.69	0.00	112.5
5C1	10.10	4.85	9.08	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	2.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.6	74.1
OPER	151.3	-109.3	123.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	HS20	-33.45	4.21	-25.73	3.24	-26.18	3.90	-20.14	3.00
OPER	2F1	-19.43	2.53	-14.95	1.95	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	3.64	-20.74	2.80	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	3.94	-21.49	3.03	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	3.90	-19.58	3.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.96	17.59	HS 39.21	70.6
HS20	3.27	29.32	HS 65.36	117.6
2F1	5.63	48.71	0.00	84.4
3F1	4.05	33.87	0.00	93.3
4F1	3.91	31.33	0.00	105.6
5C1	4.30	31.69	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.900

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 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 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	HS20	18.28 L	14.06	19.50	0.0	28.33	21.79	47.50	
		-65.66 L	-50.51	41.00	0.0	-59.35	-45.66	60.00	37.50
OPER	2F1	15.07 L	11.60	37.50	0.0	0.00	0.00	0.00	
		-38.85 R	-29.89	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 R	11.52	95.00	0.0	0.00	0.00	0.00	
		-55.90 R	-43.00	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 R	12.30	99.00	0.0	0.00	0.00	0.00	
		-60.54 R	-46.57	73.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 R	24.16	94.50	0.0	0.00	0.00	0.00	
		-52.04 R	-40.03	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.26	2.40	6.26	2.40	HS 48.06	86.5
HS20	10.44	4.01	10.44	4.01	HS 80.09	144.2
2F1	19.63	6.77	19.63	6.77	0.00	101.5
3F1	19.75	4.70	19.75	4.70	0.00	108.2
4F1	18.50	4.34	18.50	4.34	0.00	117.3

5C1	9.42	5.05	9.42	5.05	0.00	202.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.2
OPER	151.3	-107.4	107.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	HS20	-33.45	38.42	-25.73	29.56	-26.18	29.25	-20.14	22.50
OPER	2F1	-19.43	21.64	-14.95	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-26.96	30.57	-20.74	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-27.94	32.33	-21.49	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.45	28.84	-19.58	22.18	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.67	HS 33.44	60.2
HS20	2.80	2.79	HS 55.73	100.3
2F1	4.97	4.95	0.00	74.2
3F1	3.52	3.50	0.00	80.6
4F1	3.33	3.31	0.00	89.4
5C1	3.72	3.71	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.9 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00			
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00		
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00			
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00			
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00			
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00			
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-8.2	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.2
OPER	151.3	-107.4	107.1

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	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	HS20	-38.37	38.42	-29.52	29.56	-29.05	29.25	-22.35	22.50
OPER	2F1	-21.63	21.64	-16.64	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.54	30.57	-23.49	23.52	0.00	0.00	0.00	0.00
OPER	4F1	-32.28	32.33	-24.83	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.86	28.84	-22.20	22.18	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.68	1.67	HS 33.44	60.2
HS20	2.80	2.79	HS 55.73	100.3
2F1	4.97	4.95	0.00	74.2
3F1	3.52	3.50	0.00	80.6
4F1	3.33	3.31	0.00	89.4
5C1	3.72	3.71	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	HS20	22.24 L	17.11	-8.00	0.0	19.85	15.27	15.00	
		-109.54 L	-84.26	29.50	0.0	-99.28	-76.37	60.00	40.00
OPER	2F1	13.39 L	10.30	7.50	0.0	0.00	0.00	0.00	
		-44.52 R	-34.25	67.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 L	14.81	5.00	0.0	0.00	0.00	0.00	
		-70.38 L	-54.14	45.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 L	16.01	2.00	0.0	0.00	0.00	0.00	
		-83.21 L	-64.01	45.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 L	13.17	-34.50	0.0	0.00	0.00	0.00	
		-66.15 L	-50.88	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50			
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50		
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00			
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00			
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00			
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00			
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.57	2.33	5.90	2.62	HS 46.51	83.7
HS20	10.94	3.88	9.83	4.36	HS 77.51	139.5
2F1	21.13	6.55	18.99	7.38	0.00	98.3
3F1	18.80	4.55	16.90	5.13	0.00	104.7
4F1	17.57	4.20	15.80	4.74	0.00	113.5
5C1	9.69	4.89	8.70	5.50	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.100	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) 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	108.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	HS20	-3.32	33.52	-2.55	25.78	-3.59	26.39	-2.76	20.30
OPER	2F1	-2.26	19.45	-1.74	14.97	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.47	-2.71	19.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.68	1.95	HS 39.00	70.2
HS20	34.46	3.25	HS 65.01	117.0
2F1	54.89	5.60	0.00	84.0
3F1	38.15	4.03	0.00	92.8
4F1	35.36	3.89	0.00	105.0
5C1	35.15	4.28	0.00	171.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	HS20	17.95 R	13.81	80.50	0.0	28.90	22.23	52.50	
		-65.31 R	-50.24	59.00	0.0	-58.86	-45.28	40.00	62.50
OPER	2F1	14.97 R	11.51	62.50	0.0	0.00	0.00	0.00	
		-38.64 L	-29.72	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 L	12.93	5.00	0.0	0.00	0.00	0.00	
		-55.58 L	-42.76	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 L	13.84	1.00	0.0	0.00	0.00	0.00	
		-60.20 L	-46.31	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.65 L	25.11	5.50	0.0	0.00	0.00	0.00	
		-51.81 L	-39.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.12	2.42	6.12	2.42	HS 48.48	87.3
HS20	10.21	4.04	10.21	4.04	HS 80.80	145.4
2F1	19.71	6.83	19.71	6.83	0.00	102.4
3F1	17.54	4.75	17.54	4.75	0.00	109.2
4F1	16.39	4.38	16.39	4.38	0.00	118.3

5C1	9.03	5.09	9.03	5.09	0.00	203.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Negative Bending Bott.	Positive Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.6

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	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00		72.50	
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00			
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00		72.50	
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00			
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00			
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00			
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00			
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.72	3.21	2.43	3.59	HS 48.67	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.12	146.0
2F1	7.03	8.16	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.4
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.88	6.04	4.36	6.76	0.00	174.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	5.1
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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	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	HS20	-3.32	28.27	-2.55	21.74	-4.97	23.26	-3.83	17.90
OPER	2F1	-2.26	16.97	-1.74	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.78	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.72	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.71	2.35	HS 47.04	84.7
HS20	24.51	3.92	HS 78.41	141.1
2F1	54.06	6.53	0.00	97.9
3F1	37.57	4.80	0.00	110.3
4F1	34.82	4.67	0.00	126.2
5C1	23.05	5.06	0.00	202.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	HS20	66.06 R	50.82	83.00	0.0	50.05	38.50	55.00	
		-50.42 L	-38.78	17.00	0.0	-36.77	-28.29	40.00	72.50
OPER	2F1	42.67 R	32.83	65.00	0.0	0.00	0.00	0.00	
		-33.03 L	-25.40	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 R	40.03	69.00	0.0	0.00	0.00	0.00	
		-47.51 L	-36.55	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 R	36.87	69.00	0.0	0.00	0.00	0.00	
		-51.46 L	-39.59	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.42 L	47.24	8.00	0.0	0.00	0.00	0.00	
		-44.60 L	-34.31	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.53	3.33	2.53	3.33	HS 50.62	91.1
HS20	4.22	5.56	4.22	5.56	HS 84.37	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.81	5.44	5.81	5.44	0.00	147.0

5C1	4.54	6.28	4.54	6.28	0.00	181.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment
 Superimposed Dead Load Moment

1.0 11.2

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	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50			
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00		
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	0.00		
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	0.00		
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	0.00		
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	0.00		
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.80	4.03	1.60	4.49	HS 31.99	57.6
HS20	3.00	6.71	2.67	7.48	HS 53.32	96.0
2F1	4.59	10.25	4.08	11.41	0.00	61.2
3F1	3.61	7.12	3.21	7.93	0.00	73.9
4F1	3.52	6.58	3.13	7.32	0.00	84.4
5C1	3.55	6.97	3.16	7.77	0.00	126.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.6
OPER	151.3	-120.1	112.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	HS20	-4.91	22.89	-3.77	17.61	-7.50	19.98	-5.77	15.37
OPER	2F1	-4.01	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.06	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.99	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.60	2.95	HS 59.07	106.3
HS20	16.00	4.92	HS 98.45	177.2
2F1	29.91	7.87	0.00	118.1
3F1	27.47	5.91	0.00	136.0
4F1	34.28	5.78	0.00	156.2
5C1	16.32	6.14	0.00	245.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	HS20	96.18 R	73.98	85.50	0.0	72.77	55.97	57.50	
		-41.85 L	-32.20	17.00	0.0	-32.36	-24.89	40.00	0.00
OPER	2F1	62.83 R	48.33	67.50	0.0	0.00	0.00	0.00	
		-27.42 L	-21.09	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 R	61.41	71.50	0.0	0.00	0.00	0.00	
		-39.44 L	-30.34	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 R	63.08	71.50	0.0	0.00	0.00	0.00	
		-42.72 L	-32.86	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 L	62.43	10.50	0.0	0.00	0.00	0.00	
		-40.28 L	-30.98	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.18	1.67	4.18	HS 33.33	60.0
HS20	2.78	6.97	2.78	6.97	HS 55.55	100.0
2F1	4.25	10.64	4.25	10.64	0.00	63.8
3F1	3.35	7.39	3.35	7.39	0.00	77.0
4F1	3.26	6.83	3.26	6.83	0.00	88.0

5C1	3.29	7.24	3.29	7.24	0.00	131.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00			
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00		
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00			
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00			
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00			
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00			
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.19	1.39	5.76	HS 27.75	49.9
HS20	2.61	8.64	2.31	9.60	HS 46.25	83.2
2F1	3.82	13.20	3.38	14.66	0.00	50.7
3F1	2.98	9.17	2.64	10.19	0.00	60.8
4F1	2.78	8.47	2.46	9.41	0.00	66.5
5C1	3.01	7.66	2.67	8.51	0.00	106.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.7
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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	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.37	16.66	-7.97	12.81
OPER	2F1	-6.32	11.58	-4.86	8.91	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	15.00	-4.97	11.54	0.00	0.00	0.00	0.00
OPER	5C1	-9.68	14.97	-7.45	11.51	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.84	3.68	HS 73.64	132.6
HS20	11.40	6.14	HS 122.74	220.9
2F1	18.69	9.90	0.00	148.4
3F1	15.65	7.63	0.00	175.5
4F1	18.29	7.64	0.00	206.2
5C1	12.20	7.65	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 3.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	HS20	107.91 R	83.01	88.00	0.0	86.39	66.46	60.00	
		-33.29 L	-25.61	17.00	0.0	-28.56	-21.97	40.00	0.00
OPER	2F1	73.79 R	56.76	70.00	0.0	0.00	0.00	0.00	
		-21.81 L	-16.77	32.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 R	72.65	70.00	0.0	0.00	0.00	0.00	
		-31.37 L	-24.13	30.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.33 R	77.94	74.00	0.0	0.00	0.00	0.00	
		-33.98 L	-26.14	27.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 R	71.91	72.00	0.0	0.00	0.00	0.00	
		-37.56 L	-28.89	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.38	1.45	5.38	HS 28.94	52.1
HS20	2.41	8.97	2.41	8.97	HS 48.24	86.8
2F1	3.53	13.69	3.53	13.69	0.00	52.9
3F1	2.76	9.52	2.76	9.52	0.00	63.4
4F1	2.57	8.79	2.57	8.79	0.00	69.4

5C1	2.78	7.95	2.78	7.95	0.00	111.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.7 19.5

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	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50			
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00		
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00			
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00			
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00			
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.59	6.97	1.41	7.74	HS 28.18	50.7
HS20	2.65	11.62	2.35	12.90	HS 46.96	84.5
2F1	3.72	17.83	3.30	19.79	0.00	49.5
3F1	2.79	12.39	2.47	13.76	0.00	56.7
4F1	2.67	11.44	2.36	12.70	0.00	63.7
5C1	2.91	7.96	2.58	8.84	0.00	103.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.1	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.48	13.39	-10.37	10.30
OPER	2F1	-8.87	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.14	-8.56	8.57	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-7.99	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.19	-9.40	9.37	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.97	HS 159.29	286.7
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.19	11.20	0.00	302.2
5C1	9.52	9.56	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.7 19.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	HS20	105.35 R	81.04	76.50	0.0	91.75	70.58	62.50	
		-24.96 R	-19.20	108.00	0.0	-24.80	-19.08	85.00	0.00
OPER	2F1	75.01 R	57.70	72.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.51	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 L	77.16	52.50	0.0	0.00	0.00	0.00	
		-23.40 R	-18.00	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 L	80.59	48.50	0.0	0.00	0.00	0.00	
		-25.34 R	-19.49	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 L	73.88	11.50	0.0	0.00	0.00	0.00	
		-36.40 R	-28.00	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.47	7.23	1.47	7.23	HS 29.40	52.9
HS20	2.45	12.05	2.45	12.05	HS 49.00	88.2
2F1	3.44	18.49	3.44	18.49	0.00	51.6
3F1	2.57	12.85	2.57	12.85	0.00	59.2
4F1	2.46	11.86	2.46	11.86	0.00	66.5

5C1	2.69	8.26	2.69	8.26	0.00	107.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00			
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00		
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00			
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00			
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.12	1.39	5.70	HS	27.81
HS20	2.61	8.54	2.32	9.49	HS	46.36
2F1	3.82	13.11	3.39	14.57		50.9
3F1	2.99	9.11	2.65	10.12		60.9
4F1	2.78	8.41	2.47	9.35		66.7
5C1	3.02	7.62	2.68	8.48		107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.74	10.28	-12.88	7.91
OPER	2F1	-11.57	6.33	-8.90	4.87	0.00	0.00	0.00	0.00
OPER	3F1	-15.00	7.56	-11.54	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.66	-11.51	7.43	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.67	6.91	HS 73.46	132.2
HS20	6.12	11.52	HS 122.44	220.4
2F1	9.88	18.72	0.00	148.2
3F1	7.62	15.68	0.00	175.2
4F1	7.62	18.32	0.00	205.9
5C1	7.64	12.26	0.00	305.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.5 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 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	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	HS20	107.95 L	83.04	37.00	0.0	86.32	66.40	65.00	
		-33.61 R	-25.85	108.00	0.0	-28.99	-22.30	85.00	0.00
OPER	2F1	73.80 L	56.77	55.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 L	72.67	55.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 L	77.96	51.00	0.0	0.00	0.00	0.00	
		-34.13 R	-26.25	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 L	71.88	53.00	0.0	0.00	0.00	0.00	
		-37.65 R	-28.96	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.32	1.45	5.32	HS 29.01	52.2
HS20	2.42	8.86	2.42	8.86	HS 48.35	87.0
2F1	3.54	13.60	3.54	13.60	0.00	53.0
3F1	2.76	9.45	2.76	9.45	0.00	63.5
4F1	2.58	8.73	2.58	8.73	0.00	69.5

5C1	2.79	7.91	2.79	7.91	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 10.0

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	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50			
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00		
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.14	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.57	96.4
2F1	4.61	10.15	4.10	11.31	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.2
4F1	3.53	6.51	3.14	7.26	0.00	84.8
5C1	3.60	6.91	3.20	7.70	0.00	128.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.4	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	HS20	-22.88	4.91	-17.60	3.78	-20.07	7.42	-15.44	5.71
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.65	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.48	-14.98	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.34	-14.12	5.65	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.73	HS 58.95	106.1
HS20	4.91	16.22	HS 98.25	176.9
2F1	7.86	29.96	0.00	117.9
3F1	5.90	27.52	0.00	135.7
4F1	5.77	34.54	0.00	155.9
5C1	6.12	16.39	0.00	244.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	HS20	96.23 L	74.03	39.50	0.0	72.61	55.85	67.50	
		-42.26 R	-32.51	108.00	0.0	-33.18	-25.52	85.00	0.00
OPER	2F1	62.86 L	48.35	57.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 L	61.45	53.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 L	63.12	53.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 R	61.97	114.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.12	1.67	4.12	HS 33.48	60.3
HS20	2.79	6.87	2.79	6.87	HS 55.80	100.4
2F1	4.27	10.54	4.27	10.54	0.00	64.1
3F1	3.36	7.33	3.36	7.33	0.00	77.3
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1	3.33	7.18	3.33	7.18	0.00	133.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00			
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00		
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 3.800

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.5 -5.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.3	73.3
OPER	151.3	-110.5	122.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	HS20	-28.26	3.27	-21.74	2.52	-23.35	4.88	-17.96	3.76
OPER	2F1	-16.97	2.24	-13.05	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.23	-17.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.48	-18.24	2.68	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.28	-16.86	4.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	15.01	HS 46.94	84.5
HS20	3.91	25.02	HS 78.23	140.8
2F1	6.51	54.45	0.00	97.7
3F1	4.78	37.85	0.00	110.1
4F1	4.66	35.08	0.00	125.9
5C1	5.04	23.16	0.00	201.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 3.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	HS20	66.14 L	50.88	42.00	0.0	50.36	38.74	70.00	
		-50.91 R	-39.16	108.00	0.0	-39.42	-30.32	85.00	135.00
OPER	2F1	42.72 L	32.86	60.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.53	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	56.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	56.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	117.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	97.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.20	4.64	6.20	0.00	185.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.5 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50			
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50		
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00			
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.86	2.29	6.17	2.58	HS 45.78	82.4
HS20	11.43	3.82	10.28	4.30	HS 76.30	137.3
2F1	21.24	6.45	19.11	7.27	0.00	96.8
3F1	21.31	4.48	19.17	5.06	0.00	103.1
4F1	19.96	4.14	17.96	4.67	0.00	111.8
5C1	10.17	4.81	9.15	5.43	0.00	192.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	3.900		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	74.4
OPER	151.3	-108.7	124.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	HS20	-33.51	3.43	-25.78	2.64	-26.48	3.49	-20.37	2.68
OPER	2F1	-19.45	2.24	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.23	-20.77	2.48	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	3.50	-21.53	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.51	-19.61	2.70	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	21.34	HS 38.91	70.0
HS20	3.24	35.57	HS 64.86	116.7
2F1	5.59	55.29	0.00	83.8
3F1	4.03	38.43	0.00	92.6
4F1	3.88	35.48	0.00	104.8
5C1	4.26	35.37	0.00	170.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	HS20	18.04 L	13.87	44.50	0.0	27.90	21.46	72.50	
		-65.64 L	-50.49	66.00	0.0	-60.21	-46.31	85.00	62.50
OPER	2F1	15.01 L	11.55	62.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 R	11.51	120.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	124.00	0.0	0.00	0.00	0.00	
		-60.49 R	-46.53	98.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 R	24.11	119.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.40	2.39	6.40	2.39	HS 47.75	85.9
HS20	10.67	3.98	10.67	3.98	HS 79.58	143.2
2F1	19.83	6.73	19.83	6.73	0.00	100.9
3F1	19.89	4.68	19.89	4.68	0.00	107.5
4F1	18.63	4.32	18.63	4.32	0.00	116.6

5C1	9.50	5.02	9.50	5.02	0.00	200.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.5

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	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00			
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00		
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00			
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.48	29.33	-20.37	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-27.99	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.90	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.93	4.94	0.00	74.0
3F1	3.49	3.50	0.00	80.4
4F1	3.30	3.31	0.00	89.2
5C1	3.70	3.70	0.00	147.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.3 -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.000

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.5

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	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	11.18	1.25	10.13	1.43
HS20	18.63	2.09	16.88	2.38
2F1	28.58	5.15	25.90	5.87
3F1	19.87	3.25	18.00	3.71
4F1	18.34	2.75	16.62	3.14
5C1	23.99	3.45	21.74	3.93
HS	25.04			45.1
HS	41.73			75.1
	0.00			77.2
	0.00			74.8
	0.00			74.3
	0.00			138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.8	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	HS20	-38.42	38.42	-29.55	29.56	-29.34	29.33	-22.57	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.32	32.33	-24.86	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.90	-22.22	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.93	4.94	0.00	74.0
3F1	3.49	3.50	0.00	80.4
4F1	3.30	3.31	0.00	89.2
5C1	3.70	3.70	0.00	147.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.3 -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	HS20	18.28 R	14.06	133.00	0.0	18.16	13.97	110.00	
		-109.67 L	-84.36	54.50	0.0	-100.89	-77.60	85.00	65.00
OPER	2F1	11.91 R	9.16	117.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	92.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	120.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	70.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	123.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	70.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	159.50	0.0	0.00	0.00	0.00	
		-66.29 R	-50.99	80.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.100 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -1.6 -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	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50			
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50		
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00			
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00			
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00			
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00			
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.78	2.29	6.10	2.58	HS 45.75	82.4
HS20	11.30	3.81	10.17	4.30	HS 76.26	137.3
2F1	21.27	6.45	19.14	7.27	0.00	96.7
3F1	21.43	4.48	19.28	5.05	0.00	103.1
4F1	20.07	4.14	18.06	4.67	0.00	111.7
5C1	10.20	4.81	9.18	5.42	0.00	192.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.55	26.47	-2.73	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.50	-2.71	19.61	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.94	1.95	HS 38.94	70.1
HS20	34.90	3.24	HS 64.91	116.8
2F1	54.98	5.59	0.00	83.9
3F1	38.22	4.03	0.00	92.7
4F1	35.42	3.88	0.00	104.9
5C1	35.21	4.27	0.00	170.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -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. 156.5	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
OPER 260.9	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	HS20	18.02 R	13.86	105.50	0.0	28.24	21.72	77.50	
		-65.61 R	-50.47	84.00	0.0	-60.27	-46.36	65.00	87.50
OPER	2F1	15.01 R	11.54	87.50	0.0	0.00	0.00	0.00	
		-38.81 L	-29.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 L	11.46	30.00	0.0	0.00	0.00	0.00	
		-55.83 L	-42.94	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 L	12.23	26.00	0.0	0.00	0.00	0.00	
		-60.46 L	-46.51	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 L	24.06	30.50	0.0	0.00	0.00	0.00	
		-52.03 L	-40.02	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.33	2.39	6.33	2.39	HS 47.72	85.9
HS20	10.55	3.98	10.55	3.98	HS 79.53	143.2
2F1	19.85	6.72	19.85	6.72	0.00	100.8
3F1	20.00	4.67	20.00	4.67	0.00	107.5
4F1	18.74	4.32	18.74	4.32	0.00	116.5

5C1	9.52	5.01	9.52	5.01	0.00	200.6
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00			
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00		
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00			
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00			
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00			
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00			
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.14	2.45	3.52	HS 49.08	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.80	147.2
2F1	7.08	8.04	6.33	9.01	0.00	95.0
3F1	5.80	5.59	5.19	6.26	0.00	119.4
4F1	6.30	5.16	5.64	5.78	0.00	139.4
5C1	5.00	5.96	4.47	6.67	0.00	178.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.5	0.0	5.3
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.4
OPER	151.3	-122.1	110.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.94	23.34	-3.80	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.11	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.84	2.35	HS 46.97	84.6
HS20	24.73	3.91	HS 78.29	140.9
2F1	54.15	6.52	0.00	97.8
3F1	37.64	4.79	0.00	110.1
4F1	34.88	4.67	0.00	126.0
5C1	23.08	5.05	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.200 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.6

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. 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 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	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	HS20	66.13 R	50.87	108.00	0.0	49.52	38.09	80.00	
		-50.90 L	-39.16	42.00	0.0	-39.65	-30.50	65.00	15.00
OPER	2F1	42.72 R	32.86	90.00	0.0	0.00	0.00	0.00	
		-33.17 L	-25.52	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 R	40.08	94.00	0.0	0.00	0.00	0.00	
		-47.72 L	-36.71	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 R	36.92	94.00	0.0	0.00	0.00	0.00	
		-51.68 L	-39.76	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 L	46.54	33.00	0.0	0.00	0.00	0.00	
		-44.80 L	-34.46	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.27	2.55	3.27	HS 51.03	91.9
HS20	4.25	5.45	4.25	5.45	HS 85.05	153.1
2F1	6.58	8.37	6.58	8.37	0.00	98.8
3F1	5.40	5.82	5.40	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.0

5C1	4.65	6.20	4.65	6.20	0.00	185.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.300 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 9.4

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50			
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00		
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00			
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00			
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.41	HS	32.23
HS20	3.02	6.60	2.69	7.36	HS	53.72
2F1	4.62	10.12	4.11	11.29		0.00
3F1	3.64	7.04	3.24	7.84		0.00
4F1	3.54	6.50	3.15	7.24		0.00
5C1	3.61	6.89	3.21	7.69		0.00

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	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.47	20.06	-5.74	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.66	2.95	HS 58.99	106.2
HS20	16.10	4.92	HS 98.32	177.0
2F1	29.94	7.86	0.00	117.9
3F1	27.51	5.91	0.00	135.8
4F1	34.35	5.78	0.00	156.0
5C1	16.34	6.13	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	HS20	96.23 R	74.03	110.50	0.0	72.33	55.64	82.50	
		-42.26 L	-32.50	42.00	0.0	-33.40	-25.69	65.00	0.00
OPER	2F1	62.86 R	48.36	92.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.18	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	96.50	0.0	0.00	0.00	0.00	
		-39.61 L	-30.47	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	96.50	0.0	0.00	0.00	0.00	
		-42.90 L	-33.00	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 L	61.96	35.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.10	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.11	1.68	4.11	HS 33.57	60.4
HS20	2.80	6.85	2.80	6.85	HS 55.96	100.7
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.31	3.37	7.31	0.00	77.5
4F1	3.28	6.75	3.28	6.75	0.00	88.6

5C1	3.34	7.16	3.34	7.16	0.00	133.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 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	169.9	-171.7	150.7	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00			
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00		
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00			
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00			
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.40	5.68	HS	27.92
HS20	2.62	8.51	2.33	9.46	HS	46.54
2F1	3.84	13.06	3.40	14.52		0.00
3F1	3.00	9.08	2.66	10.10		0.00
4F1	2.79	8.38	2.48	9.32		0.00
5C1	3.03	7.59	2.69	8.44		0.00

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.	4.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.6
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.33	16.73	-7.95	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.87	3.68	HS 73.52	132.3
HS20	11.46	6.13	HS 122.53	220.5
2F1	18.72	9.88	0.00	148.2
3F1	15.67	7.62	0.00	175.3
4F1	18.31	7.63	0.00	206.0
5C1	12.22	7.64	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.4
 Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	HS20	107.95 R	83.04	113.00	0.0	86.05	66.19	85.00	
		-33.61 L	-25.85	42.00	0.0	-29.38	-22.60	65.00	0.00
OPER	2F1	73.82 R	56.78	95.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	57.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	95.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	55.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	99.00	0.0	0.00	0.00	0.00	
		-34.12 L	-26.25	52.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 R	71.89	97.00	0.0	0.00	0.00	0.00	
		-37.67 L	-28.98	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.30	1.46	5.30	HS 29.12	52.4
HS20	2.43	8.83	2.43	8.83	HS 48.53	87.4
2F1	3.55	13.55	3.55	13.55	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.8
4F1	2.58	8.70	2.58	8.70	0.00	69.8

5C1	2.80	7.88	2.80	7.88	0.00	112.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	R	81.05	101.50	0.0	91.50	70.38	87.50		
		-24.97	R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00	
OPER	HS20	105.37	R	81.05	101.50	0.0	91.50	70.38	87.50		
		-24.97	R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00	
OPER	2F1	75.03	R	57.71	97.50	0.0	0.00	0.00	0.00		
		-16.27	R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.33	L	77.18	77.50	0.0	0.00	0.00	0.00		
		-23.41	R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.80	L	80.62	73.50	0.0	0.00	0.00	0.00		
		-25.35	R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.71	R	73.62	138.50	0.0	0.00	0.00	0.00		
		-36.46	R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.83	1.42	7.59	HS 28.31	51.0
HS20	2.66	11.38	2.36	12.64	HS 47.19	84.9
2F1	3.74	17.74	3.31	19.71	0.00	49.7
3F1	2.80	12.33	2.48	13.70	0.00	57.0
4F1	2.68	11.39	2.37	12.65	0.00	64.1
5C1	2.93	7.92	2.60	8.80	0.00	103.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	HS20	-14.61	14.61	-11.23	11.23	-13.44	13.47	-10.34	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.40	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.53	172.0
HS20	7.97	7.96	HS 159.21	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.0
5C1	9.53	9.51	0.00	380.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.4	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	HS20	105.37 R	81.05	101.50	0.0	91.50	70.38	87.50	
		-24.97 R	-19.20	133.00	0.0	-25.37	-19.51	110.00	0.00
OPER	2F1	75.03 R	57.71	97.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 L	77.18	77.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 L	80.62	73.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	138.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	118.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	7.08	1.48	7.08	HS 29.54	53.2
HS20	2.46	11.80	2.46	11.80	HS 49.23	88.6
2F1	3.46	18.40	3.46	18.40	0.00	51.9
3F1	2.59	12.79	2.59	12.79	0.00	59.5
4F1	2.47	11.81	2.47	11.81	0.00	66.8

5C1	2.71	8.21	2.71	8.21	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 16.2

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	169.8	-171.8	150.6	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	283.0	-286.3	251.0	-318.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00			
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00		
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.57	5.11	1.39	5.68	HS 27.90	50.2
HS20	2.62	8.52	2.33	9.47	HS 46.51	83.7
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.39	2.48	9.32	0.00	66.9
5C1	3.03	7.60	2.69	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.71	10.36	-12.85	7.97
OPER	2F1	-11.57	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.85	HS 73.56	132.4
HS20	6.13	11.42	HS 122.61	220.7
2F1	9.89	18.70	0.00	148.3
3F1	7.63	15.66	0.00	175.4
4F1	7.63	18.30	0.00	206.1
5C1	7.65	12.21	0.00	305.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	HS20	107.95 L	83.04	62.00	0.0	86.15	66.27	90.00	
		-33.62 R	-25.86	133.00	0.0	-29.36	-22.58	110.00	0.00
OPER	2F1	73.82 L	56.78	80.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	80.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	76.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	78.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.98	119.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.30	1.46	5.30	HS 29.10	52.4
HS20	2.42	8.84	2.42	8.84	HS 48.50	87.3
2F1	3.55	13.56	3.55	13.56	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.7
4F1	2.58	8.70	2.58	8.70	0.00	69.7

5C1	2.80	7.88	2.80	7.88	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50			
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00		
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.19	57.9
HS20	3.02	6.61	2.68	7.36	HS 53.64	96.6
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.15	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.6	72.1
OPER	151.3	-112.6	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.03	7.49	-15.41	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.62	HS 59.03	106.3
HS20	4.92	16.03	HS 98.38	177.1
2F1	7.87	29.92	0.00	118.0
3F1	5.91	27.49	0.00	135.9
4F1	5.78	34.34	0.00	156.1
5C1	6.13	16.33	0.00	245.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 4.700

Dead Load Moment 0.8

Superimposed Dead Load Moment 9.7

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	HS20	96.24 L	74.03	64.50	0.0	72.53	55.79	92.50	
		-42.26 R	-32.51	133.00	0.0	-33.35	-25.65	110.00	0.00
OPER	2F1	62.87 L	48.36	82.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	78.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	78.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	139.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	121.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.12	1.68	4.12	HS 33.53	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.88	100.6
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.5

5C1	3.34	7.17	3.34	7.17	0.00	133.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00			
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00		
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.97	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.62	146.9
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.31	4.96	-17.93	3.82
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.76	HS 47.01	84.6
HS20	3.92	24.59	HS 78.34	141.0
2F1	6.52	54.14	0.00	97.9
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.87	0.00	126.1
5C1	5.05	23.07	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 4.800 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
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 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	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	HS20	66.14 L	50.88	67.00	0.0	50.38	38.76	95.00	
		-50.91 R	-39.16	133.00	0.0	-39.40	-30.31	110.00	160.00
OPER	2F1	42.72 L	32.86	85.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	81.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	81.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	142.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.92	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.87	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.5 -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	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50		
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50			
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50		
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.79	2.29	6.11	2.59	HS 45.87	82.6
HS20	11.32	3.82	10.19	4.31	HS 76.45	137.6
2F1	21.21	6.46	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.3
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.43	0.00	192.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	4.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.3
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.44	3.58	-20.34	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.53	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.79	HS 38.97	70.1
HS20	3.25	34.65	HS 64.95	116.9
2F1	5.59	54.97	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	105.0
5C1	4.27	35.20	0.00	170.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 4.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	HS20	18.03 L	13.87	69.50	0.0	28.12	21.63	97.50	
		-65.63 L	-50.49	91.00	0.0	-60.10	-46.23	110.00	87.50
OPER	2F1	15.01 L	11.55	87.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	145.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	120.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	149.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	123.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	144.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.34	2.39	6.34	2.39	HS 47.84	86.1
HS20	10.57	3.99	10.57	3.99	HS 79.73	143.5
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.68	19.86	4.68	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1	9.48	5.03	9.48	5.03	0.00	201.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.001

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.2 -35.7

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	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.93	3.47	21.67	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.44	29.31	-20.34	22.55
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.53	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.43	3.63	22.43	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.2 -35.7

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	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00			
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00			90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00			
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00			
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00			
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00			
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.93	3.47	21.67	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.30	29.31	-22.54	22.55
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 5.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	HS20	18.28 R	14.06	158.00	0.0	18.58	14.29	135.00	
		-109.68 L	-84.37	79.50	0.0	-100.68	-77.45	110.00	90.00
OPER	2F1	11.91 R	9.16	142.50	0.0	0.00	0.00	0.00	
		-44.46 R	-34.20	117.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 R	13.18	145.00	0.0	0.00	0.00	0.00	
		-70.34 L	-54.11	95.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 R	14.28	148.00	0.0	0.00	0.00	0.00	
		-83.16 L	-63.97	95.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 R	10.92	184.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.95	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.43	3.63	22.43	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.5 -16.2

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	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50			
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50		
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.68	2.29	6.01	2.59	HS 45.89	82.6
HS20	11.13	3.82	10.01	4.31	HS 76.48	137.7
2F1	21.21	6.47	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.4
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.44	0.00	192.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.6	0.0	6.9
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.4	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.45	-2.75	20.35
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.81	1.95	HS 38.96	70.1
HS20	34.67	3.25	HS 64.94	116.9
2F1	54.96	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	104.9
5C1	35.19	4.27	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	HS20	18.03 R	13.87	130.50	0.0	28.61	22.00	102.50	
		-65.63 R	-50.49	109.00	0.0	-60.09	-46.22	90.00	112.50
OPER	2F1	15.01 R	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	55.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 L	12.28	51.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.10	55.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.23	2.39	6.23	2.39	HS 47.85	86.1
HS20	10.39	3.99	10.39	3.99	HS 79.75	143.5
2F1	19.79	6.74	19.79	6.74	0.00	101.1
3F1	19.86	4.69	19.86	4.69	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1	9.48	5.03	9.48	5.03	0.00	201.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00			
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00		
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.58	146.9
2F1	7.06	8.06	6.32	9.03	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.33	-3.81	17.94
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.77	2.35	HS 47.00	84.6
HS20	24.61	3.92	HS 78.33	141.0
2F1	54.13	6.52	0.00	97.8
3F1	37.63	4.79	0.00	110.2
4F1	34.87	4.67	0.00	126.0
5C1	23.07	5.05	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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 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	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	HS20	66.14 R	50.88	133.00	0.0	49.83	38.33	105.00	
		-50.91 L	-39.16	67.00	0.0	-39.32	-30.25	90.00	40.00
OPER	2F1	42.72 R	32.86	115.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	119.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	119.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	58.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.83	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 9.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50			
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00		
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.81	3.97	1.61	4.42	HS 32.16	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.61	96.5
2F1	4.61	10.14	4.10	11.30	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.3
4F1	3.53	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.91	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.05	-5.76	15.42
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.63	2.95	HS 59.02	106.2
HS20	16.05	4.92	HS 98.36	177.0
2F1	29.93	7.87	0.00	118.0
3F1	27.50	5.91	0.00	135.9
4F1	34.33	5.78	0.00	156.0
5C1	16.33	6.13	0.00	245.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	HS20	96.24 R	74.03	135.50	0.0	72.59	55.84	107.50	
		-42.26 L	-32.51	67.00	0.0	-33.28	-25.60	90.00	0.00
OPER	2F1	62.87 R	48.36	117.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	121.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	121.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	60.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	79.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.12	1.67	4.12	HS 33.50	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.84	100.5
2F1	4.27	10.53	4.27	10.53	0.00	64.1
3F1	3.36	7.32	3.36	7.32	0.00	77.4
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1	3.34	7.17	3.34	7.17	0.00	133.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.79		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00			
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00		
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.48	HS 46.46	83.6
2F1	3.83	13.08	3.40	14.54	0.00	51.0
3F1	2.99	9.09	2.65	10.11	0.00	61.0
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.35	16.72	-7.96	12.86
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.55	132.4
HS20	11.43	6.13	HS 122.58	220.6
2F1	18.71	9.89	0.00	148.3
3F1	15.66	7.62	0.00	175.4
4F1	18.31	7.63	0.00	206.1
5C1	12.21	7.64	0.00	305.8

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 5.400

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	HS20	107.95 R	83.04	138.00	0.0	86.25	66.34	110.00	
		-33.62 L	-25.86	67.00	0.0	-29.29	-22.53	90.00	0.00
OPER	2F1	73.82 R	56.78	120.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	82.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	120.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.24	80.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	124.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	77.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	122.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.31	1.45	5.31	HS 29.07	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.45	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.1
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	111.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.992

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50			
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00		
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00			
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00			
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00			
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00			
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00	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	1.60	6.85	1.41	7.61	HS 28.28	50.9
HS20	2.66	11.42	2.36	12.69	HS 47.13	84.8
2F1	3.74	17.76	3.31	19.73	0.00	49.6
3F1	2.79	12.35	2.47	13.71	0.00	56.9
4F1	2.67	11.40	2.37	12.66	0.00	64.0
5C1	2.93	7.93	2.59	8.80	0.00	103.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.46	13.45	-10.36	10.35
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.57	172.0
HS20	7.97	7.96	HS 159.28	286.7
2F1	13.11	13.10	0.00	196.6
3F1	10.46	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	HS20	105.37 L	81.05	98.50	0.0	91.64	70.49	112.50	
		-24.97 R	-19.21	158.00	0.0	-25.30	-19.46	135.00	0.00
OPER	2F1	75.03 L	57.71	102.50	0.0	0.00	0.00	0.00	
		-16.27 R	-12.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	122.50	0.0	0.00	0.00	0.00	
		-23.41 R	-18.01	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	126.50	0.0	0.00	0.00	0.00	
		-25.35 R	-19.50	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 R	73.62	163.50	0.0	0.00	0.00	0.00	
		-36.46 R	-28.05	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	7.11	1.48	7.11	HS 29.50	53.1
HS20	2.46	11.85	2.46	11.85	HS 49.17	88.5
2F1	3.45	18.42	3.45	18.42	0.00	51.8
3F1	2.58	12.81	2.58	12.81	0.00	59.4
4F1	2.47	11.82	2.47	11.82	0.00	66.7

5C1	2.71	8.22	2.71	8.22	0.00	108.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00			0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00			
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00			0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.47	HS 46.47	83.6
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.09	2.65	10.10	0.00	61.1
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.34	-12.87	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.53	132.4
HS20	6.13	11.44	HS 122.55	220.6
2F1	9.89	18.71	0.00	148.3
3F1	7.62	15.66	0.00	175.3
4F1	7.63	18.31	0.00	206.0
5C1	7.64	12.21	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	HS20	107.95 L	83.04	87.00	0.0	86.23	66.33	115.00	
		-33.62 R	-25.86	158.00	0.0	-29.32	-22.55	135.00	0.00
OPER	2F1	73.82 L	56.78	105.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	105.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.25	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	101.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	103.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.30	1.45	5.30	HS 29.08	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.46	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.2
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50			
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00		
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00			
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.18	57.9
HS20	3.01	6.61	2.68	7.36	HS 53.63	96.5
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.5	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.48	-15.43	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.64	HS 59.00	106.2
HS20	4.92	16.07	HS 98.34	177.0
2F1	7.86	29.94	0.00	118.0
3F1	5.91	27.50	0.00	135.9
4F1	5.78	34.34	0.00	156.0
5C1	6.13	16.33	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	HS20	96.24 L	74.03	89.50	0.0	72.56	55.82	117.50	
		-42.26 R	-32.51	158.00	0.0	-33.34	-25.64	135.00	0.00
OPER	2F1	62.87 L	48.36	107.50	0.0	0.00	0.00	0.00	
		-27.55 R	-21.19	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.46	103.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	103.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	164.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.12	1.68	4.12	HS 33.52	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.86	100.6
2F1	4.28	10.53	4.28	10.53	0.00	64.1
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.4

5C1	3.34	7.17	3.34	7.17	0.00	133.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			185.00
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00			
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00			185.00
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00			
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00			0.00
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00			
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00			0.00
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00			
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00			0.00
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00			
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00			0.00
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.95	-17.95	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.10	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.80	HS 46.99	84.6
HS20	3.91	24.66	HS 78.31	141.0
2F1	6.52	54.14	0.00	97.8
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.88	0.00	126.0
5C1	5.05	23.08	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	HS20	66.14 L	50.88	92.00	0.0	50.36	38.74	120.00	
		-50.91 R	-39.16	158.00	0.0	-39.42	-30.32	135.00	185.00
OPER	2F1	42.72 L	32.86	110.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	106.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	106.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	167.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.20	4.64	6.20	0.00	185.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50			
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50		
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.81	2.29	6.13	2.58	HS 45.84	82.5
HS20	11.35	3.82	10.21	4.31	HS 76.40	137.5
2F1	21.23	6.46	19.09	7.28	0.00	96.9
3F1	21.29	4.49	19.15	5.06	0.00	103.3
4F1	19.94	4.14	17.94	4.67	0.00	111.9
5C1	10.16	4.82	9.15	5.43	0.00	192.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	5.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.46	3.57	-20.36	2.74
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.86	HS 38.95	70.1
HS20	3.25	34.76	HS 64.92	116.9
2F1	5.59	54.97	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	104.9
5C1	4.27	35.20	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 5.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.9	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
OPER 261.5	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	HS20	18.03 L	13.87	94.50	0.0	28.07	21.59	122.50	
		-65.63 L	-50.49	116.00	0.0	-60.17	-46.28	135.00	112.50
OPER	2F1	15.01 L	11.55	112.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	142.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	170.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	145.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 R	12.29	174.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	148.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.11	169.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	149.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.36	2.39	6.36	2.39	HS 47.80	86.0
HS20	10.59	3.98	10.59	3.98	HS 79.67	143.4
2F1	19.81	6.74	19.81	6.74	0.00	101.0
3F1	19.87	4.68	19.87	4.68	0.00	107.7
4F1	18.61	4.32	18.61	4.32	0.00	116.7

5C1	9.49	5.02	9.49	5.02	0.00	200.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.0

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	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00		
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	0.00		
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	11.03	1.25	9.99	1.43	HS 25.10	45.2
HS20	18.38	2.09	16.65	2.38	HS 41.84	75.3
2F1	28.53	5.16	25.85	5.88	0.00	77.4
3F1	19.83	3.26	17.97	3.72	0.00	75.0
4F1	18.31	2.76	16.59	3.14	0.00	74.5
5C1	23.95	3.46	21.70	3.95	0.00	138.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.46	29.32	-20.36	22.56
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.33	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.39	60.1
HS20	2.78	2.78	HS 55.65	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.4
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.34	1.31	10.34	1.31	HS 26.28	47.3
HS20	17.23	2.19	17.23	2.19	HS 43.80	78.8
2F1	26.75	5.40	26.75	5.40	0.00	81.0
3F1	18.59	3.41	18.59	3.41	0.00	78.5
4F1	17.17	2.89	17.17	2.89	0.00	78.0

5C1	22.45	3.63	22.45	3.63	0.00	145.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.3 -36.0

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	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	135.00		
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00			
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	0.00		
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	11.03	1.25	9.99	1.43	HS 25.10	45.2
HS20	18.38	2.09	16.65	2.38	HS 41.84	75.3
2F1	28.53	5.16	25.85	5.88	0.00	77.4
3F1	19.83	3.26	17.97	3.72	0.00	75.0
4F1	18.31	2.76	16.59	3.14	0.00	74.5
5C1	23.95	3.46	21.70	3.95	0.00	138.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.32	29.32	-22.56	22.56
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.33	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.39	60.1
HS20	2.78	2.78	HS 55.65	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.4
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 6.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.3 -36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	HS20	18.28 L	14.06	67.00	0.0	18.49	14.22	90.00	
		-109.68 R	-84.37	145.50	0.0	-100.81	-77.54	115.00	135.00
OPER	2F1	11.91 L	9.16	82.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	80.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	77.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	130.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	40.50	0.0	0.00	0.00	0.00	
		-66.23 R	-50.94	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.34	1.31	10.34	1.31	HS 26.28	47.3
HS20	17.23	2.19	17.23	2.19	HS 43.80	78.8
2F1	26.75	5.40	26.75	5.40	0.00	81.0
3F1	18.59	3.41	18.59	3.41	0.00	78.5
4F1	17.17	2.89	17.17	2.89	0.00	78.0

5C1	22.45	3.63	22.45	3.63	0.00	145.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.5 -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50			
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50		
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.70	2.29	6.02	2.58	HS 45.84	82.5
HS20	11.16	3.82	10.04	4.31	HS 76.40	137.5
2F1	21.23	6.46	19.09	7.28	0.00	96.9
3F1	21.29	4.49	19.15	5.06	0.00	103.3
4F1	19.94	4.14	17.94	4.67	0.00	111.9
5C1	10.16	4.82	9.14	5.43	0.00	192.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.57	26.46	-2.74	20.36
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.50	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.54	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.86	1.95	HS 38.95	70.1
HS20	34.76	3.25	HS 64.92	116.9
2F1	54.98	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	104.9
5C1	35.20	4.27	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.9	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
OPER 261.5	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	HS20	18.03 R	13.87	155.50	0.0	28.54	21.96	127.50	
		-65.63 R	-50.49	134.00	0.0	-60.20	-46.30	115.00	137.50
OPER	2F1	15.01 R	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	80.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	76.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	80.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.25	2.39	6.25	2.39	HS 47.80	86.0
HS20	10.42	3.98	10.42	3.98	HS 79.67	143.4
2F1	19.81	6.74	19.81	6.74	0.00	101.0
3F1	19.87	4.68	19.87	4.68	0.00	107.7
4F1	18.61	4.32	18.61	4.32	0.00	116.7

5C1	9.49	5.02	9.49	5.02	0.00	200.9
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00			
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00		
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.95	23.34	-3.81	17.95
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.50	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.80	2.35	HS 46.99	84.6
HS20	24.66	3.91	HS 78.31	141.0
2F1	54.14	6.52	0.00	97.8
3F1	37.63	4.79	0.00	110.2
4F1	34.88	4.67	0.00	126.0
5C1	23.08	5.05	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	HS20	66.14 R	50.88	158.00	0.0	49.79	38.30	130.00	
		-50.91 L	-39.16	92.00	0.0	-39.41	-30.32	115.00	65.00
OPER	2F1	42.72 R	32.86	140.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	144.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	144.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	83.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	103.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.20	4.64	6.20	0.00	185.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50			
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00		
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.18	57.9
HS20	3.01	6.61	2.68	7.36	HS 53.63	96.5
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.14	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.5
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.48	20.05	-5.76	15.43
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.64	2.95	HS 59.00	106.2
HS20	16.07	4.92	HS 98.34	177.0
2F1	29.94	7.86	0.00	118.0
3F1	27.50	5.91	0.00	135.9
4F1	34.34	5.78	0.00	156.0
5C1	16.33	6.13	0.00	245.1

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 6.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	HS20	96.24 R	74.03	160.50	0.0	72.56	55.82	132.50	
		-42.27 L	-32.51	92.00	0.0	-33.34	-25.64	115.00	0.00
OPER	2F1	62.87 R	48.36	142.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.46	146.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.13	146.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.98	85.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	104.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.12	1.68	4.12	HS 33.52	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.86	100.6
2F1	4.28	10.53	4.28	10.53	0.00	64.1
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.4

5C1	3.34	7.17	3.34	7.17	0.00	133.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			92.087

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.19		105.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00			
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00		
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.47	HS 46.47	83.6
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.09	2.65	10.10	0.00	61.1
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.34	16.73	-7.96	12.87
OPER	2F1	-6.32	11.58	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.86	3.68	HS 73.53	132.4
HS20	11.44	6.13	HS 122.55	220.6
2F1	18.71	9.89	0.00	148.3
3F1	15.66	7.62	0.00	175.3
4F1	18.31	7.63	0.00	206.0
5C1	12.21	7.64	0.00	305.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 6.400 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.4 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	HS20	107.96 R	83.04	163.00	0.0	86.23	66.33	135.00	
		-33.62 L	-25.86	92.00	0.0	-29.32	-22.55	115.00	0.00
OPER	2F1	73.82 R	56.78	145.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 R	72.69	145.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	149.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	147.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.99	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.30	1.45	5.30	HS 29.08	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.46	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.2
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	L	81.05	123.50	0.0	91.64	70.49	137.50		
		-24.97	L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00	
OPER	HS20	105.37	L	81.05	123.50	0.0	91.64	70.49	137.50		
		-24.97	L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00	
OPER	2F1	75.03	L	57.71	127.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	100.34	R	77.18	147.50	0.0	0.00	0.00	0.00		
		-23.41	L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.80	R	80.62	151.50	0.0	0.00	0.00	0.00		
		-25.35	L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	95.71	L	73.62	86.50	0.0	0.00	0.00	0.00		
		-36.46	L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.60	6.85	1.41	7.61	HS 28.28	50.9
HS20	2.66	11.42	2.36	12.69	HS 47.13	84.8
2F1	3.74	17.76	3.31	19.73	0.00	49.6
3F1	2.79	12.35	2.47	13.71	0.00	56.9
4F1	2.67	11.40	2.37	12.66	0.00	64.0
5C1	2.93	7.93	2.59	8.80	0.00	103.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	HS20	-14.61	14.61	-11.24	11.24	-13.45	13.46	-10.35	10.36
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.39	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.55	172.0
HS20	7.97	7.96	HS 159.25	286.6
2F1	13.12	13.10	0.00	196.5
3F1	10.46	10.44	0.00	240.2
4F1	11.20	11.19	0.00	302.1
5C1	9.53	9.52	0.00	380.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 6.500 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 1.6 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	HS20	105.37 L	81.05	123.50	0.0	91.64	70.49	137.50	
		-24.97 L	-19.21	92.00	0.0	-25.30	-19.46	115.00	0.00
OPER	2F1	75.03 L	57.71	127.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	107.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.34 R	77.18	147.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	105.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	151.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	102.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	86.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	7.11	1.48	7.11	HS 29.50	53.1
HS20	2.46	11.85	2.46	11.85	HS 49.17	88.5
2F1	3.45	18.42	3.45	18.42	0.00	51.8
3F1	2.58	12.81	2.58	12.81	0.00	59.4
4F1	2.47	11.82	2.47	11.82	0.00	66.7

5C1	2.71	8.22	2.71	8.22	0.00	108.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

1.4 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00			
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00		
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00			
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00			
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00			
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00			
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.88	50.2
HS20	2.62	8.52	2.32	9.48	HS 46.46	83.6
2F1	3.83	13.08	3.40	14.54	0.00	51.0
3F1	2.99	9.09	2.65	10.11	0.00	61.0
4F1	2.79	8.39	2.47	9.33	0.00	66.8
5C1	3.03	7.60	2.68	8.45	0.00	107.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.72	10.35	-12.86	7.96
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.86	HS 73.55	132.4
HS20	6.13	11.43	HS 122.58	220.6
2F1	9.89	18.71	0.00	148.3
3F1	7.62	15.66	0.00	175.4
4F1	7.63	18.31	0.00	206.1
5C1	7.64	12.21	0.00	305.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 6.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	HS20	107.95 L	83.04	112.00	0.0	86.25	66.34	140.00	
		-33.62 R	-25.86	183.00	0.0	-29.29	-22.53	160.00	0.00
OPER	2F1	73.82 L	56.78	130.00	0.0	0.00	0.00	0.00	
		-21.91 R	-16.85	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.50 L	72.69	130.00	0.0	0.00	0.00	0.00	
		-31.52 R	-24.24	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	126.00	0.0	0.00	0.00	0.00	
		-34.14 R	-26.26	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 L	71.89	128.00	0.0	0.00	0.00	0.00	
		-37.68 R	-28.99	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.31	1.45	5.31	HS 29.07	52.3
HS20	2.42	8.84	2.42	8.84	HS 48.45	87.2
2F1	3.54	13.57	3.54	13.57	0.00	53.1
3F1	2.77	9.43	2.77	9.43	0.00	63.7
4F1	2.58	8.71	2.58	8.71	0.00	69.7

5C1	2.80	7.89	2.80	7.89	0.00	111.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.9 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	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50			
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00		
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00			
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00			
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00			
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.16	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.61	96.5
2F1	4.61	10.14	4.10	11.30	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.3
4F1	3.53	6.51	3.14	7.26	0.00	84.9
5C1	3.60	6.91	3.20	7.70	0.00	128.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.6	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.05	7.49	-15.42	5.76
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.63	HS 59.02	106.2
HS20	4.92	16.05	HS 98.36	177.0
2F1	7.87	29.93	0.00	118.0
3F1	5.91	27.50	0.00	135.9
4F1	5.78	34.33	0.00	156.0
5C1	6.13	16.33	0.00	245.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	HS20	96.24 L	74.03	114.50	0.0	72.59	55.84	142.50	
		-42.26 R	-32.51	183.00	0.0	-33.28	-25.60	160.00	0.00
OPER	2F1	62.87 L	48.36	132.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.19	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	128.50	0.0	0.00	0.00	0.00	
		-39.63 R	-30.48	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	128.50	0.0	0.00	0.00	0.00	
		-42.92 R	-33.01	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 R	61.97	189.50	0.0	0.00	0.00	0.00	
		-40.45 R	-31.11	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.12	1.67	4.12	HS 33.50	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.84	100.5
2F1	4.27	10.53	4.27	10.53	0.00	64.1
3F1	3.36	7.32	3.36	7.32	0.00	77.4
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1	3.34	7.17	3.34	7.17	0.00	133.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	bottom fiber +bend	top fiber -bend	top fiber +bend	bottom fiber -bend	bottom fiber +bend	top fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00			
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00		
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00			
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00			
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00			
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00			
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	bottom fiber +bend	top fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.95	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.59	146.9
2F1	7.06	8.06	6.32	9.03	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.99	5.97	4.46	6.68	0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.33	4.96	-17.94	3.81
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.77	HS 47.00	84.6
HS20	3.92	24.61	HS 78.33	141.0
2F1	6.52	54.13	0.00	97.8
3F1	4.79	37.63	0.00	110.2
4F1	4.67	34.87	0.00	126.0
5C1	5.05	23.07	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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 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	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	HS20	66.14 L	50.88	117.00	0.0	50.40	38.77	145.00	
		-50.91 R	-39.16	183.00	0.0	-39.32	-30.25	160.00	210.00
OPER	2F1	42.72 L	32.86	135.00	0.0	0.00	0.00	0.00	
		-33.18 R	-25.52	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 L	40.08	131.00	0.0	0.00	0.00	0.00	
		-47.74 R	-36.72	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 L	36.92	131.00	0.0	0.00	0.00	0.00	
		-51.70 R	-39.77	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 R	46.57	192.00	0.0	0.00	0.00	0.00	
		-44.81 R	-34.47	172.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.90	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.83	152.7
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.2

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	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50			
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50		
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00			
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00			
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00			
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00			
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.79	2.29	6.11	2.59	HS 45.89	82.6
HS20	11.32	3.82	10.18	4.31	HS 76.48	137.7
2F1	21.21	6.47	19.08	7.29	0.00	97.0
3F1	21.28	4.49	19.14	5.07	0.00	103.4
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.44	0.00	192.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	6.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.45	3.57	-20.35	2.75
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.81	HS 38.96	70.1
HS20	3.25	34.67	HS 64.94	116.9
2F1	5.59	54.96	0.00	83.9
3F1	4.03	38.21	0.00	92.7
4F1	3.89	35.28	0.00	104.9
5C1	4.27	35.19	0.00	170.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 6.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	HS20	18.03 L	13.87	119.50	0.0	28.13	21.64	147.50	
		-65.63 L	-50.49	141.00	0.0	-60.06	-46.20	160.00	137.50
OPER	2F1	15.01 L	11.55	137.50	0.0	0.00	0.00	0.00	
		-38.82 R	-29.86	167.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 R	11.51	195.00	0.0	0.00	0.00	0.00	
		-55.85 R	-42.96	170.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.97 R	12.28	199.00	0.0	0.00	0.00	0.00	
		-60.48 R	-46.53	173.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 R	24.10	194.50	0.0	0.00	0.00	0.00	
		-52.05 R	-40.04	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.34	2.39	6.34	2.39	HS 47.85	86.1
HS20	10.56	3.99	10.56	3.99	HS 79.75	143.6
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.69	19.86	4.69	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1	9.48	5.03	9.48	5.03	0.00	201.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-3.2 -35.7

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	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.84	3.47	21.59	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	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	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	HS20	-33.51	38.42	-25.78	29.56	-26.45	29.30	-20.35	22.54
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-25.49	28.89	-19.61	22.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.35	3.63	22.35	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.966

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.2 -35.7

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	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00			
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00			160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00			
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	10.97	1.26	9.94	1.43	HS 25.14	45.2
HS20	18.28	2.10	16.56	2.39	HS 41.89	75.4
2F1	28.51	5.17	25.82	5.89	0.00	77.5
3F1	19.81	3.27	17.95	3.72	0.00	75.1
4F1	18.30	2.76	16.57	3.15	0.00	74.6
5C1	23.84	3.47	21.59	3.95	0.00	138.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	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	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	HS20	-38.42	38.42	-29.56	29.56	-29.31	29.30	-22.55	22.54
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.87	0.00	0.00	0.00	0.00
OPER	5C1	-28.89	28.89	-22.23	22.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.40	60.1
HS20	2.78	2.78	HS 55.66	100.2
2F1	4.94	4.94	0.00	74.1
3F1	3.50	3.50	0.00	80.5
4F1	3.31	3.31	0.00	89.3
5C1	3.70	3.70	0.00	148.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 7.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	HS20	18.28 L	14.06	92.00	0.0	18.58	14.29	115.00	
		-109.68 L	-84.37	129.50	0.0	-100.68	-77.45	140.00	160.00
OPER	2F1	11.91 L	9.16	107.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	105.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	102.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	155.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.24 R	10.96	234.50	0.0	0.00	0.00	0.00	
		-66.23 L	-50.95	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.28	1.32	10.28	1.32	HS 26.31	47.4
HS20	17.14	2.19	17.14	2.19	HS 43.85	78.9
2F1	26.72	5.41	26.72	5.41	0.00	81.1
3F1	18.58	3.42	18.58	3.42	0.00	78.6
4F1	17.15	2.89	17.15	2.89	0.00	78.1

5C1	22.35	3.63	22.35	3.63	0.00	145.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -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	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50			
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50		
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00			
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.68	2.29	6.01	2.59	HS 45.87	82.6
HS20	11.13	3.82	10.02	4.31	HS 76.45	137.6
2F1	21.21	6.46	19.08	7.29	0.00	96.9
3F1	21.28	4.49	19.14	5.07	0.00	103.3
4F1	19.93	4.15	17.93	4.68	0.00	112.0
5C1	10.16	4.82	9.14	5.43	0.00	192.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.3	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	HS20	-3.31	33.51	-2.55	25.78	-3.58	26.44	-2.75	20.34
OPER	2F1	-2.25	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	27.00	-2.49	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	28.00	-2.69	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.52	25.49	-2.71	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.79	1.95	HS 38.97	70.1
HS20	34.65	3.25	HS 64.95	116.9
2F1	54.97	5.59	0.00	83.9
3F1	38.21	4.03	0.00	92.7
4F1	35.41	3.89	0.00	105.0
5C1	35.20	4.27	0.00	170.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	HS20	18.03 R	13.87	180.50	0.0	28.60	22.00	152.50	
		-65.63 R	-50.49	159.00	0.0	-60.13	-46.25	140.00	162.50
OPER	2F1	15.01 R	11.55	162.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.96 L	11.51	105.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	101.00	0.0	0.00	0.00	0.00	
		-60.48 L	-46.53	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.34 L	24.11	105.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.23	2.39	6.23	2.39	HS 47.84	86.1
HS20	10.39	3.99	10.39	3.99	HS 79.73	143.5
2F1	19.80	6.74	19.80	6.74	0.00	101.1
3F1	19.86	4.68	19.86	4.68	0.00	107.8
4F1	18.60	4.33	18.60	4.33	0.00	116.8

5C1	9.48	5.03	9.48	5.03	0.00	201.1
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00		90.00	
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00			
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00		90.00	
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.74	3.15	2.45	3.53	HS	48.97	88.2
HS20	4.57	5.25	4.08	5.88	HS	81.62	146.9
2F1	7.07	8.06	6.32	9.02		0.00	94.8
3F1	5.79	5.60	5.18	6.27		0.00	119.1
4F1	6.29	5.17	5.62	5.79		0.00	139.6
5C1	4.99	5.97	4.46	6.68		0.00	178.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.0	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	HS20	-3.31	28.26	-2.55	21.74	-4.96	23.31	-3.82	17.93
OPER	2F1	-2.25	16.97	-1.73	13.06	0.00	0.00	0.00	0.00
OPER	3F1	-3.24	23.10	-2.49	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	23.71	-2.69	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.29	21.92	-4.07	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.76	2.35	HS 47.01	84.6
HS20	24.59	3.92	HS 78.34	141.0
2F1	54.14	6.52	0.00	97.9
3F1	37.63	4.79	0.00	110.2
4F1	34.88	4.67	0.00	126.1
5C1	23.07	5.05	0.00	202.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.1	-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 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	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	HS20	66.14 R	50.88	183.00	0.0	49.81	38.32	155.00	
		-50.91 L	-39.16	117.00	0.0	-39.39	-30.30	140.00	90.00
OPER	2F1	42.72 R	32.86	165.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	169.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	169.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	108.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.92	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.87	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.5
3F1	5.39	5.83	5.39	5.83	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.21	4.64	6.21	0.00	185.4
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50			
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00		
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00			
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00			
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.96	1.61	4.42	HS 32.19	57.9
HS20	3.02	6.61	2.68	7.36	HS 53.64	96.6
2F1	4.61	10.14	4.11	11.30	0.00	61.6
3F1	3.63	7.05	3.23	7.85	0.00	74.3
4F1	3.54	6.51	3.15	7.25	0.00	84.9
5C1	3.60	6.90	3.20	7.69	0.00	128.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.6
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	HS20	-4.91	22.89	-3.78	17.61	-7.49	20.03	-5.76	15.41
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.66	0.00	0.00	0.00	0.00
OPER	4F1	-3.50	19.48	-2.69	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.36	18.36	-5.66	14.13	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.62	2.95	HS 59.03	106.3
HS20	16.03	4.92	HS 98.38	177.1
2F1	29.92	7.87	0.00	118.0
3F1	27.49	5.91	0.00	135.9
4F1	34.34	5.78	0.00	156.1
5C1	16.33	6.13	0.00	245.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 7.300

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	HS20	96.24 R	74.03	185.50	0.0	72.53	55.79	157.50	
		-42.26 L	-32.51	117.00	0.0	-33.35	-25.65	140.00	0.00
OPER	2F1	62.87 R	48.36	167.50	0.0	0.00	0.00	0.00	
		-27.55 L	-21.19	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 R	61.45	171.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 R	63.12	171.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.57 L	61.97	110.50	0.0	0.00	0.00	0.00	
		-40.45 L	-31.11	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.12	1.68	4.12	HS 33.53	60.3
HS20	2.79	6.86	2.79	6.86	HS 55.88	100.6
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.32	3.37	7.32	0.00	77.4
4F1	3.28	6.76	3.28	6.76	0.00	88.5

5C1	3.34	7.17	3.34	7.17	0.00	133.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		19.68		105.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.4 16.2

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	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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00			
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00		
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00			
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00			
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00			
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00			
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.39	5.68	HS 27.90	50.2
HS20	2.62	8.52	2.33	9.47	HS 46.51	83.7
2F1	3.83	13.07	3.40	14.53	0.00	51.0
3F1	2.99	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.39	2.48	9.32	0.00	66.9
5C1	3.03	7.60	2.69	8.45	0.00	107.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.2	0.0	1.8
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.36	16.71	-7.97	12.85
OPER	2F1	-6.32	11.57	-4.86	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.55	15.01	-5.81	11.55	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.69	14.97	-7.45	11.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.85	3.68	HS 73.56	132.4
HS20	11.42	6.13	HS 122.61	220.7
2F1	18.70	9.89	0.00	148.3
3F1	15.66	7.63	0.00	175.4
4F1	18.30	7.63	0.00	206.1
5C1	12.21	7.65	0.00	305.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	HS20	107.96 R	83.04	188.00	0.0	86.15	66.27	160.00	
		-33.62 L	-25.86	117.00	0.0	-29.36	-22.58	140.00	0.00
OPER	2F1	73.82 R	56.78	170.00	0.0	0.00	0.00	0.00	
		-21.91 L	-16.85	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 R	72.69	170.00	0.0	0.00	0.00	0.00	
		-31.52 L	-24.25	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 R	77.98	174.00	0.0	0.00	0.00	0.00	
		-34.14 L	-26.26	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.46 R	71.89	172.00	0.0	0.00	0.00	0.00	
		-37.68 L	-28.98	130.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.30	1.46	5.30	HS 29.10	52.4
HS20	2.42	8.84	2.42	8.84	HS 48.50	87.3
2F1	3.55	13.56	3.55	13.56	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.7
4F1	2.58	8.70	2.58	8.70	0.00	69.7

5C1	2.80	7.88	2.80	7.88	0.00	112.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			91.974

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.37	L	81.05	148.50	0.0	91.50	70.38	162.50		
		-24.97	L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00	
OPER	HS20	105.37	L	81.05	148.50	0.0	91.50	70.38	162.50		
		-24.97	L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00	
OPER	2F1	75.03	L	57.71	152.50	0.0	0.00	0.00	0.00		
		-16.27	L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	100.33	R	77.18	172.50	0.0	0.00	0.00	0.00		
		-23.41	L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	104.80	R	80.62	176.50	0.0	0.00	0.00	0.00		
		-25.35	L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	95.71	L	73.62	111.50	0.0	0.00	0.00	0.00		
		-36.46	L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.60	6.83	1.42	7.59
HS20	2.66	11.38	2.36	12.64
2F1	3.74	17.74	3.31	19.71
3F1	2.80	12.33	2.48	13.70
4F1	2.68	11.39	2.37	12.65
5C1	2.93	7.92	2.60	8.80

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.	7.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	HS20	-14.61	14.61	-11.24	11.23	-13.47	13.44	-10.36	10.34
OPER	2F1	-8.88	8.88	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.13	11.13	-8.56	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	8.00	0.00	0.00	0.00	0.00
OPER	5C1	-12.22	12.22	-9.40	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.78	4.78	HS 95.59	172.1
HS20	7.97	7.97	HS 159.32	286.8
2F1	13.11	13.11	0.00	196.6
3F1	10.45	10.45	0.00	240.3
4F1	11.20	11.19	0.00	302.2
5C1	9.52	9.52	0.00	380.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.4	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	HS20	105.37 L	81.05	148.50	0.0	91.50	70.38	162.50	
		-24.97 L	-19.21	117.00	0.0	-25.37	-19.51	140.00	0.00
OPER	2F1	75.03 L	57.71	152.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.52	132.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.33 R	77.18	172.50	0.0	0.00	0.00	0.00	
		-23.41 L	-18.01	130.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.80 R	80.62	176.50	0.0	0.00	0.00	0.00	
		-25.35 L	-19.50	127.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.71 L	73.62	111.50	0.0	0.00	0.00	0.00	
		-36.46 L	-28.05	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	7.08	1.48	7.08	HS 29.54	53.2
HS20	2.46	11.80	2.46	11.80	HS 49.23	88.6
2F1	3.46	18.40	3.46	18.40	0.00	51.9
3F1	2.59	12.79	2.59	12.79	0.00	59.5
4F1	2.47	11.81	2.47	11.81	0.00	66.8

5C1	2.71	8.21	2.71	8.21	0.00	108.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.4 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	169.9	-171.7	150.7	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00			
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00		
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00			
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00			
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00			
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00			
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.11	1.40	5.68	HS 27.92	50.3
HS20	2.62	8.51	2.33	9.46	HS 46.54	83.8
2F1	3.84	13.06	3.40	14.52	0.00	51.0
3F1	3.00	9.08	2.66	10.10	0.00	61.1
4F1	2.79	8.38	2.48	9.32	0.00	66.9
5C1	3.03	7.59	2.69	8.44	0.00	107.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.6	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.73	10.33	-12.87	7.95
OPER	2F1	-11.58	6.32	-8.90	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-14.99	6.46	-11.53	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.69	-11.52	7.45	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.87	HS 73.52	132.3
HS20	6.13	11.46	HS 122.53	220.5
2F1	9.88	18.72	0.00	148.2
3F1	7.62	15.67	0.00	175.3
4F1	7.63	18.31	0.00	206.0
5C1	7.64	12.22	0.00	305.6

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03
Check Point I. D. 7.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	HS20	107.95 L	83.04	137.00	0.0	86.05	66.19	165.00	
		-33.61 R	-25.85	208.00	0.0	-29.38	-22.60	185.00	0.00
OPER	2F1	73.82 L	56.78	155.00	0.0	0.00	0.00	0.00	
		-21.90 R	-16.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.49 L	72.69	155.00	0.0	0.00	0.00	0.00	
		-31.51 R	-24.24	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.37 L	77.98	151.00	0.0	0.00	0.00	0.00	
		-34.12 R	-26.25	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.45 L	71.89	153.00	0.0	0.00	0.00	0.00	
		-37.67 R	-28.98	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.46	5.30	1.46	5.30	HS 29.12	52.4
HS20	2.43	8.83	2.43	8.83	HS 48.53	87.4
2F1	3.55	13.55	3.55	13.55	0.00	53.2
3F1	2.77	9.42	2.77	9.42	0.00	63.8
4F1	2.58	8.70	2.58	8.70	0.00	69.8

5C1	2.80	7.88	2.80	7.88	0.00	112.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50			
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00		
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00			
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00			
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00			
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00			
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.81	3.96	1.61	4.41	HS 32.23	58.0
HS20	3.02	6.60	2.69	7.36	HS 53.72	96.7
2F1	4.62	10.12	4.11	11.29	0.00	61.7
3F1	3.64	7.04	3.24	7.84	0.00	74.4
4F1	3.54	6.50	3.15	7.24	0.00	85.1
5C1	3.61	6.89	3.21	7.69	0.00	128.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.1
OPER	151.3	-112.5	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	HS20	-22.89	4.91	-17.61	3.78	-20.06	7.47	-15.43	5.74
OPER	2F1	-14.31	4.02	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.05	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.98	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.66	HS 58.99	106.2
HS20	4.92	16.10	HS 98.31	177.0
2F1	7.86	29.94	0.00	117.9
3F1	5.91	27.51	0.00	135.8
4F1	5.78	34.35	0.00	156.0
5C1	6.13	16.34	0.00	245.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.8
 Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	HS20	96.23 L	74.03	139.50	0.0	72.33	55.64	167.50	
		-42.26 R	-32.50	208.00	0.0	-33.39	-25.69	185.00	0.00
OPER	2F1	62.86 L	48.36	157.50	0.0	0.00	0.00	0.00	
		-27.54 R	-21.18	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.89 L	61.45	153.50	0.0	0.00	0.00	0.00	
		-39.61 R	-30.47	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.06 L	63.12	153.50	0.0	0.00	0.00	0.00	
		-42.90 R	-33.00	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.54 R	61.96	214.50	0.0	0.00	0.00	0.00	
		-40.44 R	-31.10	196.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.68	4.11	1.68	4.11	HS 33.57	60.4
HS20	2.80	6.85	2.80	6.85	HS 55.96	100.7
2F1	4.28	10.52	4.28	10.52	0.00	64.2
3F1	3.37	7.31	3.37	7.31	0.00	77.5
4F1	3.28	6.75	3.28	6.75	0.00	88.6

5C1	3.34	7.16	3.34	7.16	0.00	133.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.2 -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	235.00		
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00			
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	235.00		
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00			
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	0.00		
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00			
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	0.00		
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00			
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	0.00		
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00			
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	0.00		
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.14	2.45	3.52	HS 49.08	88.3
HS20	4.57	5.24	4.09	5.87	HS 81.80	147.2
2F1	7.08	8.04	6.33	9.01	0.00	95.0
3F1	5.80	5.59	5.19	6.26	0.00	119.4
4F1	6.30	5.16	5.64	5.78	0.00	139.4
5C1	5.00	5.96	4.47	6.67	0.00	178.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.4	73.3
OPER	151.3	-110.6	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	HS20	-28.26	3.31	-21.74	2.55	-23.34	4.94	-17.95	3.80
OPER	2F1	-16.97	2.25	-13.06	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.24	-17.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.71	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.84	HS 46.97	84.6
HS20	3.91	24.73	HS 78.29	140.9
2F1	6.52	54.15	0.00	97.8
3F1	4.79	37.64	0.00	110.1
4F1	4.67	34.88	0.00	126.0
5C1	5.05	23.08	0.00	201.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-0.2 -1.6

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. 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 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	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	HS20	66.13 L	50.87	142.00	0.0	50.09	38.53	170.00	
		-50.90 R	-39.16	208.00	0.0	-39.66	-30.51	185.00	235.00
OPER	2F1	42.72 L	32.86	160.00	0.0	0.00	0.00	0.00	
		-33.17 R	-25.52	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.10 L	40.08	156.00	0.0	0.00	0.00	0.00	
		-47.72 R	-36.71	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.99 L	36.92	156.00	0.0	0.00	0.00	0.00	
		-51.68 R	-39.76	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.50 R	46.54	217.00	0.0	0.00	0.00	0.00	
		-44.80 R	-34.46	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.27	2.55	3.27	HS 51.03	91.9
HS20	4.25	5.45	4.25	5.45	HS 85.05	153.1
2F1	6.58	8.37	6.58	8.37	0.00	98.8
3F1	5.40	5.82	5.40	5.82	0.00	124.1
4F1	5.86	5.37	5.86	5.37	0.00	145.0

5C1	4.65	6.20	4.65	6.20	0.00	185.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -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	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50			
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50		
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00			
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00			
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00			
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00			
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.90	2.29	6.20	2.58	HS 45.75	82.4
HS20	11.49	3.81	10.34	4.30	HS 76.26	137.3
2F1	21.27	6.45	19.14	7.27	0.00	96.7
3F1	21.43	4.48	19.28	5.05	0.00	103.1
4F1	20.07	4.14	18.06	4.67	0.00	111.7
5C1	10.20	4.81	9.18	5.42	0.00	192.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	7.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	HS20	-33.51	3.46	-25.78	2.66	-26.47	3.55	-20.36	2.73
OPER	2F1	-19.45	2.25	-14.96	1.73	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.24	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	3.52	-19.61	2.71	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.94	HS 38.94	70.1
HS20	3.24	34.90	HS 64.91	116.8
2F1	5.59	54.98	0.00	83.9
3F1	4.03	38.22	0.00	92.7
4F1	3.88	35.29	0.00	104.9
5C1	4.27	35.21	0.00	170.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 7.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -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. 156.5	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
OPER 260.9	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	HS20	18.02 L	13.86	144.50	0.0	27.76	21.36	172.50	
		-65.61 L	-50.47	166.00	0.0	-60.24	-46.34	185.00	162.50
OPER	2F1	15.01 L	11.54	162.50	0.0	0.00	0.00	0.00	
		-38.81 R	-29.85	192.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.89 R	11.46	220.00	0.0	0.00	0.00	0.00	
		-55.83 R	-42.94	195.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.90 R	12.23	224.00	0.0	0.00	0.00	0.00	
		-60.46 R	-46.51	198.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.28 R	24.06	219.50	0.0	0.00	0.00	0.00	
		-52.03 R	-40.02	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.44	2.39	6.44	2.39	HS 47.72	85.9
HS20	10.73	3.98	10.73	3.98	HS 79.53	143.2
2F1	19.85	6.72	19.85	6.72	0.00	100.9
3F1	20.00	4.67	20.00	4.67	0.00	107.5
4F1	18.74	4.32	18.74	4.32	0.00	116.5

5C1	9.52	5.01	9.52	5.01	0.00	200.6
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.284

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.5

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	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00			
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00		
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00			
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00			
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00			
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00			
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	HS20	-33.51	38.42	-25.78	29.55	-26.47	29.34	-20.36	22.57
OPER	2F1	-19.45	21.64	-14.96	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.57	-20.77	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.32	-21.54	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-25.50	28.89	-19.61	22.22	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.94	4.93	0.00	74.0
3F1	3.50	3.49	0.00	80.4
4F1	3.31	3.30	0.00	89.2
5C1	3.70	3.70	0.00	147.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.5

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	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	185.00		
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00			
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	185.00		
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00			
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	0.00		
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	0.00		
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	0.00		
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	0.00		
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	11.18	1.25	10.13	1.43	HS 25.04	45.1
HS20	18.63	2.09	16.88	2.38	HS 41.73	75.1
2F1	28.58	5.15	25.90	5.87	0.00	77.2
3F1	19.87	3.25	18.00	3.71	0.00	74.8
4F1	18.34	2.75	16.62	3.14	0.00	74.3
5C1	23.99	3.45	21.74	3.93	0.00	138.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.000		2F1
			3F1
			4F1
			5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	HS20	-38.42	38.42	-29.56	29.55	-29.33	29.34	-22.56	22.57
OPER	2F1	-21.64	21.64	-16.65	16.65	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.57	-23.51	23.51	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.32	-24.87	24.86	0.00	0.00	0.00	0.00
OPER	5C1	-28.90	28.89	-22.23	22.22	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.67	HS 33.35	60.0
HS20	2.78	2.78	HS 55.59	100.1
2F1	4.94	4.93	0.00	74.0
3F1	3.50	3.49	0.00	80.4
4F1	3.31	3.30	0.00	89.2
5C1	3.70	3.70	0.00	147.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	HS20	18.28 L	14.06	117.00	0.0	18.16	13.97	140.00	
		-109.67 R	-84.36	195.50	0.0	-100.89	-77.60	165.00	185.00
OPER	2F1	11.91 L	9.16	132.50	0.0	0.00	0.00	0.00	
		-44.46 L	-34.20	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.14 L	13.18	130.00	0.0	0.00	0.00	0.00	
		-70.34 R	-54.11	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.56 L	14.28	127.00	0.0	0.00	0.00	0.00	
		-83.16 R	-63.97	180.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.19 L	10.92	90.50	0.0	0.00	0.00	0.00	
		-66.29 L	-50.99	170.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.48	1.31	10.48	1.31	HS 26.21	47.2
HS20	17.47	2.18	17.47	2.18	HS 43.69	78.6
2F1	26.80	5.39	26.80	5.39	0.00	80.8
3F1	18.63	3.40	18.63	3.40	0.00	78.3
4F1	17.20	2.88	17.20	2.88	0.00	77.8

5C1	22.49	3.61	22.49	3.61	0.00	144.6
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.5 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50		
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50			
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50		
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00			
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00			
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00			
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00			
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.74	2.29	6.07	2.58	HS 45.78	82.4
HS20	11.24	3.82	10.11	4.30	HS 76.30	137.3
2F1	21.24	6.45	19.11	7.27	0.00	96.8
3F1	21.31	4.48	19.17	5.06	0.00	103.1
4F1	19.96	4.14	17.96	4.67	0.00	111.8
5C1	10.17	4.81	9.15	5.43	0.00	192.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.6	0.0	7.1
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.4	65.2
OPER	151.3	-124.1	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	HS20	-3.27	33.51	-2.52	25.78	-3.49	26.48	-2.68	20.37
OPER	2F1	-2.24	19.45	-1.73	14.96	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	27.00	-2.48	20.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	27.99	-2.68	21.53	0.00	0.00	0.00	0.00
OPER	5C1	-3.51	25.49	-2.70	19.61	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.34	1.95	HS 38.91	70.0
HS20	35.57	3.24	HS 64.86	116.7
2F1	55.29	5.59	0.00	83.8
3F1	38.43	4.03	0.00	92.6
4F1	35.61	3.88	0.00	104.8
5C1	35.37	4.26	0.00	170.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	HS20	18.04 R	13.87	205.50	0.0	28.38	21.83	177.50	
		-65.64 R	-50.49	184.00	0.0	-60.23	-46.33	165.00	187.50
OPER	2F1	15.01 R	11.55	187.50	0.0	0.00	0.00	0.00	
		-38.82 L	-29.86	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.97 L	11.51	130.00	0.0	0.00	0.00	0.00	
		-55.85 L	-42.96	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.98 L	12.29	126.00	0.0	0.00	0.00	0.00	
		-60.49 L	-46.53	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.35 L	24.11	130.50	0.0	0.00	0.00	0.00	
		-52.05 L	-40.04	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.29	2.39	6.29	2.39	HS 47.75	85.9
HS20	10.49	3.98	10.49	3.98	HS 79.58	143.2
2F1	19.83	6.73	19.83	6.73	0.00	100.9
3F1	19.89	4.68	19.89	4.68	0.00	107.5
4F1	18.63	4.32	18.63	4.32	0.00	116.6

5C1	9.50	5.02	9.50	5.02	0.00	200.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.4	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	302.0	-267.3	270.0	-299.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00		115.00	
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00			
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00		115.00	
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00			
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00			
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.74	3.15	2.45	3.53	HS 48.98	88.2
HS20	4.57	5.25	4.08	5.88	HS 81.64	147.0
2F1	7.07	8.06	6.32	9.02	0.00	94.8
3F1	5.80	5.60	5.18	6.27	0.00	119.2
4F1	6.29	5.17	5.62	5.79	0.00	139.6
5C1	4.99	5.97	4.46	6.68	0.00	178.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.3	66.3
OPER	151.3	-122.2	110.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	HS20	-3.27	28.26	-2.52	21.74	-4.88	23.35	-3.76	17.96
OPER	2F1	-2.24	16.97	-1.73	13.05	0.00	0.00	0.00	0.00
OPER	3F1	-3.23	23.10	-2.48	17.77	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	23.71	-2.68	18.24	0.00	0.00	0.00	0.00
OPER	5C1	-5.28	21.92	-4.06	16.86	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.01	2.35	HS 46.94	84.5
HS20	25.02	3.91	HS 78.23	140.8
2F1	54.45	6.51	0.00	97.7
3F1	37.85	4.78	0.00	110.1
4F1	35.08	4.66	0.00	125.9
5C1	23.16	5.04	0.00	201.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.4	-166.8	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	HS20	66.14 R	50.88	208.00	0.0	49.79	38.30	180.00	
		-50.91 L	-39.16	142.00	0.0	-39.41	-30.32	165.00	115.00
OPER	2F1	42.72 R	32.86	190.00	0.0	0.00	0.00	0.00	
		-33.18 L	-25.53	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.11 R	40.08	194.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.72	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.00 R	36.92	194.00	0.0	0.00	0.00	0.00	
		-51.70 L	-39.77	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.54 L	46.57	133.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.55	3.28	2.55	3.28	HS 50.93	91.7
HS20	4.24	5.46	4.24	5.46	HS 84.89	152.8
2F1	6.57	8.38	6.57	8.38	0.00	98.6
3F1	5.39	5.82	5.39	5.82	0.00	123.9
4F1	5.85	5.38	5.85	5.38	0.00	145.2

5C1	4.64	6.20	4.64	6.20	0.00	185.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.9 10.0

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	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50			
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00		
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00			
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00			
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00			
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00			
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.81	3.97	1.61	4.42	HS 32.14	57.9
HS20	3.01	6.61	2.68	7.37	HS 53.57	96.4
2F1	4.61	10.15	4.10	11.31	0.00	61.5
3F1	3.63	7.05	3.23	7.86	0.00	74.2
4F1	3.53	6.51	3.14	7.26	0.00	84.8
5C1	3.60	6.91	3.20	7.70	0.00	128.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.3	0.0	3.6
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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	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	HS20	-4.91	22.88	-3.78	17.60	-7.42	20.07	-5.71	15.44
OPER	2F1	-4.02	14.31	-3.09	11.01	0.00	0.00	0.00	0.00
OPER	3F1	-4.37	19.05	-3.36	14.65	0.00	0.00	0.00	0.00
OPER	4F1	-3.48	19.48	-2.68	14.98	0.00	0.00	0.00	0.00
OPER	5C1	-7.34	18.36	-5.65	14.12	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.73	2.95	HS 58.95	106.1
HS20	16.22	4.91	HS 98.25	176.9
2F1	29.96	7.86	0.00	117.9
3F1	27.52	5.90	0.00	135.7
4F1	34.54	5.77	0.00	155.9
5C1	16.39	6.12	0.00	244.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.9
 Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	HS20	96.23 R	74.03	210.50	0.0	72.61	55.85	182.50	
		-42.26 L	-32.51	142.00	0.0	-33.18	-25.52	165.00	0.00
OPER	2F1	62.86 R	48.35	192.50	0.0	0.00	0.00	0.00	
		-27.54 L	-21.19	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.88 R	61.45	196.50	0.0	0.00	0.00	0.00	
		-39.63 L	-30.48	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.05 R	63.12	196.50	0.0	0.00	0.00	0.00	
		-42.92 L	-33.01	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.56 L	61.97	135.50	0.0	0.00	0.00	0.00	
		-40.44 L	-31.11	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.12	1.67	4.12	HS 33.48	60.3
HS20	2.79	6.87	2.79	6.87	HS 55.80	100.4
2F1	4.27	10.54	4.27	10.54	0.00	64.1
3F1	3.36	7.33	3.36	7.33	0.00	77.3
4F1	3.27	6.76	3.27	6.76	0.00	88.4

5C1	3.33	7.18	3.33	7.18	0.00	133.3
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	92.235

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.99		105.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00			
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00		
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00			
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00			
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00			
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00			
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.12	1.39	5.70	HS 27.81	50.1
HS20	2.61	8.54	2.32	9.49	HS 46.36	83.4
2F1	3.82	13.11	3.39	14.57	0.00	50.9
3F1	2.99	9.11	2.65	10.12	0.00	60.9
4F1	2.78	8.41	2.47	9.35	0.00	66.7
5C1	3.02	7.62	2.68	8.48	0.00	107.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

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	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	HS20	-9.98	18.67	-7.68	14.36	-10.28	16.74	-7.91	12.88
OPER	2F1	-6.33	11.57	-4.87	8.90	0.00	0.00	0.00	0.00
OPER	3F1	-7.56	15.00	-5.81	11.54	0.00	0.00	0.00	0.00
OPER	4F1	-6.46	14.99	-4.97	11.53	0.00	0.00	0.00	0.00
OPER	5C1	-9.66	14.97	-7.43	11.51	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.91	3.67	HS 73.46	132.2
HS20	11.52	6.12	HS 122.44	220.4
2F1	18.72	9.88	0.00	148.2
3F1	15.68	7.62	0.00	175.2
4F1	18.32	7.62	0.00	205.9
5C1	12.26	7.64	0.00	305.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.5 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 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	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	HS20	107.95 R	83.04	213.00	0.0	86.32	66.40	185.00	
		-33.61 L	-25.85	142.00	0.0	-28.99	-22.30	165.00	0.00
OPER	2F1	73.80 R	56.77	195.00	0.0	0.00	0.00	0.00	
		-21.90 L	-16.85	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.48 R	72.67	195.00	0.0	0.00	0.00	0.00	
		-31.51 L	-24.24	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.35 R	77.96	199.00	0.0	0.00	0.00	0.00	
		-34.13 L	-26.25	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.44 R	71.88	197.00	0.0	0.00	0.00	0.00	
		-37.65 L	-28.96	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.32	1.45	5.32	HS 29.01	52.2
HS20	2.42	8.86	2.42	8.86	HS 48.35	87.0
2F1	3.54	13.60	3.54	13.60	0.00	53.0
3F1	2.76	9.45	2.76	9.45	0.00	63.5
4F1	2.58	8.73	2.58	8.73	0.00	69.5

5C1	2.79	7.91	2.79	7.91	0.00	111.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.7 19.5

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	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50			
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00		0.00	
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50			
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00		0.00	
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00		0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00		0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00		0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00		0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.59	6.97	1.41	7.74	HS 28.18	50.7
HS20	2.65	11.62	2.35	12.90	HS 46.96	84.5
2F1	3.72	17.83	3.30	19.79	0.00	49.5
3F1	2.79	12.39	2.47	13.76	0.00	56.7
4F1	2.67	11.44	2.36	12.70	0.00	63.7
5C1	2.91	7.96	2.58	8.84	0.00	103.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.500	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	HS20	-14.60	14.60	-11.23	11.23	-13.39	13.48	-10.30	10.37
OPER	2F1	-8.88	8.87	-6.83	6.83	0.00	0.00	0.00	0.00
OPER	3F1	-11.14	11.13	-8.57	8.56	0.00	0.00	0.00	0.00
OPER	4F1	-10.40	10.39	-8.00	7.99	0.00	0.00	0.00	0.00
OPER	5C1	-12.19	12.22	-9.37	9.40	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.79	4.77	HS 95.47	171.8
HS20	7.98	7.96	HS 159.11	286.4
2F1	13.13	13.09	0.00	196.4
3F1	10.47	10.44	0.00	240.1
4F1	11.21	11.18	0.00	301.9
5C1	9.57	9.51	0.00	380.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 8.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.7

Superimposed Dead Load Moment 19.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	HS20	105.35 L	81.04	173.50	0.0	91.75	70.58	187.50	
		-24.96 L	-19.20	142.00	0.0	-24.80	-19.08	165.00	0.00
OPER	2F1	75.01 L	57.70	177.50	0.0	0.00	0.00	0.00	
		-16.27 L	-12.51	157.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.30 R	77.16	197.50	0.0	0.00	0.00	0.00	
		-23.40 L	-18.00	155.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.77 R	80.59	201.50	0.0	0.00	0.00	0.00	
		-25.34 L	-19.50	152.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	96.04 R	73.88	238.50	0.0	0.00	0.00	0.00	
		-36.40 L	-28.00	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.47	7.23	1.47	7.23	HS 29.40	52.9
HS20	2.45	12.05	2.45	12.05	HS 49.00	88.2
2F1	3.44	18.49	3.44	18.49	0.00	51.6
3F1	2.57	12.85	2.57	12.85	0.00	59.2
4F1	2.46	11.86	2.46	11.86	0.00	66.5

5C1	2.69	8.26	2.69	8.26	0.00	107.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 8.600 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00			
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00		
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00			
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00			
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00			
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00			
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.57	5.19	1.39	5.76	HS 27.75	49.9
HS20	2.61	8.64	2.31	9.60	HS 46.25	83.2
2F1	3.82	13.20	3.38	14.66	0.00	50.7
3F1	2.98	9.17	2.64	10.19	0.00	60.8
4F1	2.78	8.47	2.46	9.41	0.00	66.5
5C1	3.01	7.66	2.67	8.51	0.00	106.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-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	-114.6	118.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	HS20	-18.67	9.98	-14.36	7.68	-16.66	10.37	-12.81	7.97
OPER	2F1	-11.58	6.32	-8.91	4.86	0.00	0.00	0.00	0.00
OPER	3F1	-15.01	7.55	-11.55	5.81	0.00	0.00	0.00	0.00
OPER	4F1	-15.00	6.46	-11.54	4.97	0.00	0.00	0.00	0.00
OPER	5C1	-14.97	9.68	-11.51	7.45	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.68	6.84	HS 73.64	132.6
HS20	6.14	11.40	HS 122.74	220.9
2F1	9.90	18.69	0.00	148.4
3F1	7.63	15.65	0.00	175.5
4F1	7.64	18.29	0.00	206.2
5C1	7.65	12.20	0.00	306.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	HS20	107.91 L	83.01	162.00	0.0	86.39	66.46	190.00	
		-33.29 R	-25.61	233.00	0.0	-28.56	-21.97	210.00	0.00
OPER	2F1	73.79 L	56.76	180.00	0.0	0.00	0.00	0.00	
		-21.81 R	-16.77	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.45 L	72.65	180.00	0.0	0.00	0.00	0.00	
		-31.37 R	-24.13	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.32 L	77.94	176.00	0.0	0.00	0.00	0.00	
		-33.98 R	-26.14	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.48 L	71.91	178.00	0.0	0.00	0.00	0.00	
		-37.56 R	-28.89	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.45	5.38	1.45	5.38	HS 28.94	52.1
HS20	2.41	8.97	2.41	8.97	HS 48.24	86.8
2F1	3.53	13.69	3.53	13.69	0.00	52.9
3F1	2.76	9.52	2.76	9.52	0.00	63.4
4F1	2.57	8.79	2.57	8.79	0.00	69.4

5C1	2.78	7.95	2.78	7.95	0.00	111.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 8.700 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.0 11.2

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	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50			
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00		
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00			
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00			
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00			
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00			
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.80	4.03	1.60	4.49	HS 31.99	57.6
HS20	3.00	6.71	2.67	7.48	HS 53.32	96.0
2F1	4.59	10.25	4.08	11.41	0.00	61.2
3F1	3.61	7.12	3.21	7.93	0.00	73.9
4F1	3.52	6.58	3.13	7.32	0.00	84.4
5C1	3.55	6.97	3.16	7.77	0.00	126.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.6	72.0
OPER	151.3	-112.7	120.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	HS20	-22.89	4.91	-17.61	3.77	-19.98	7.50	-15.37	5.77
OPER	2F1	-14.31	4.01	-11.01	3.09	0.00	0.00	0.00	0.00
OPER	3F1	-19.06	4.37	-14.66	3.36	0.00	0.00	0.00	0.00
OPER	4F1	-19.48	3.50	-14.99	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-18.36	7.36	-14.13	5.66	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.95	9.60	HS 59.07	106.3
HS20	4.92	16.00	HS 98.45	177.2
2F1	7.87	29.91	0.00	118.1
3F1	5.91	27.47	0.00	136.0
4F1	5.78	34.28	0.00	156.2
5C1	6.14	16.32	0.00	245.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.0 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	HS20	96.18 L	73.98	164.50	0.0	72.77	55.97	192.50	
		-41.85 R	-32.20	233.00	0.0	-32.36	-24.89	210.00	0.00
OPER	2F1	62.83 L	48.33	182.50	0.0	0.00	0.00	0.00	
		-27.42 R	-21.09	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.83 L	61.41	178.50	0.0	0.00	0.00	0.00	
		-39.44 R	-30.34	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	82.00 L	63.08	178.50	0.0	0.00	0.00	0.00	
		-42.72 R	-32.86	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	81.15 R	62.42	239.50	0.0	0.00	0.00	0.00	
		-40.28 R	-30.98	221.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.67	4.18	1.67	4.18	HS 33.33	60.0
HS20	2.78	6.97	2.78	6.97	HS 55.55	100.0
2F1	4.25	10.64	4.25	10.64	0.00	63.8
3F1	3.35	7.39	3.35	7.39	0.00	77.0
4F1	3.26	6.83	3.26	6.83	0.00	88.0

5C1	3.29	7.24	3.29	7.24	0.00	131.7
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

0.1 0.6

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	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00			177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00			
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00			177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00			
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00			0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00			
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00			0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00			
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00			0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00			
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00			0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.72	3.21	2.43	3.59	HS 48.67	87.6
HS20	4.54	5.34	4.06	5.98	HS 81.12	146.0
2F1	7.03	8.16	6.28	9.12	0.00	94.2
3F1	5.76	5.67	5.15	6.34	0.00	118.4
4F1	6.26	5.23	5.59	5.86	0.00	141.3
5C1	4.88	6.04	4.36	6.76	0.00	174.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	HS20	-28.27	3.32	-21.74	2.55	-23.26	4.97	-17.90	3.83
OPER	2F1	-16.97	2.26	-13.06	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.11	3.25	-17.78	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-23.72	3.50	-18.24	2.69	0.00	0.00	0.00	0.00
OPER	5C1	-21.92	5.29	-16.86	4.07	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.35	14.71	HS 47.04	84.7
HS20	3.92	24.51	HS 78.41	141.1
2F1	6.53	54.06	0.00	97.9
3F1	4.80	37.57	0.00	110.3
4F1	4.67	34.82	0.00	126.2
5C1	5.06	23.05	0.00	202.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	HS20	66.06 L	50.82	167.00	0.0	50.62	38.94	195.00	
		-50.42 R	-38.78	233.00	0.0	-36.78	-28.29	210.00	177.50
OPER	2F1	42.67 L	32.83	185.00	0.0	0.00	0.00	0.00	
		-33.03 R	-25.40	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.04 L	40.03	181.00	0.0	0.00	0.00	0.00	
		-47.51 R	-36.55	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.93 L	36.87	181.00	0.0	0.00	0.00	0.00	
		-51.46 R	-39.59	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	61.41 R	47.24	242.00	0.0	0.00	0.00	0.00	
		-44.60 R	-34.31	222.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.53	3.33	2.53	3.33	HS 50.62	91.1
HS20	4.22	5.56	4.22	5.56	HS 84.37	151.9
2F1	6.53	8.48	6.53	8.48	0.00	98.0
3F1	5.36	5.89	5.36	5.89	0.00	123.2
4F1	5.81	5.44	5.81	5.44	0.00	147.0

5C1	4.54	6.28	4.54	6.28	0.00	181.5
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50			
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50		
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00			
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00			
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00			
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00			
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	6.68	2.33	6.00	2.62	HS 46.51	83.7
HS20	11.12	3.88	10.00	4.36	HS 77.51	139.5
2F1	21.13	6.55	18.99	7.38	0.00	98.3
3F1	18.80	4.55	16.90	5.13	0.00	104.7
4F1	17.57	4.20	15.80	4.74	0.00	113.5
5C1	9.69	4.89	8.70	5.50	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	8.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.6	-6.8	0.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.3
OPER	151.3	-108.9	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	HS20	-33.52	3.46	-25.78	2.66	-26.39	3.59	-20.30	2.76
OPER	2F1	-19.45	2.26	-14.97	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	3.25	-20.77	2.50	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	3.51	-21.54	2.70	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	3.52	-19.59	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	20.68	HS 39.00	70.2
HS20	3.25	34.46	HS 65.01	117.0
2F1	5.60	54.89	0.00	84.0
3F1	4.03	38.15	0.00	92.8
4F1	3.89	35.23	0.00	105.0
5C1	4.28	35.15	0.00	171.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 8.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live w/imp.	Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live w/imp.	Load Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	HS20	17.95 L	13.81	169.50	0.0	28.42	21.86	197.50	
		-65.31 L	-50.24	191.00	0.0	-58.83	-45.25	210.00	187.50
OPER	2F1	14.97 L	11.51	187.50	0.0	0.00	0.00	0.00	
		-38.64 R	-29.72	217.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	16.81 R	12.93	245.00	0.0	0.00	0.00	0.00	
		-55.58 R	-42.76	220.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	17.99 R	13.84	249.00	0.0	0.00	0.00	0.00	
		-60.20 R	-46.31	223.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.64 R	25.11	244.50	0.0	0.00	0.00	0.00	
		-51.81 R	-39.85	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.23	2.42	6.23	2.42	HS 48.48	87.3
HS20	10.38	4.04	10.38	4.04	HS 80.80	145.4
2F1	19.71	6.83	19.71	6.83	0.00	102.4
3F1	17.54	4.75	17.54	4.75	0.00	109.2
4F1	16.39	4.38	16.39	4.38	0.00	118.3

5C1	9.03	5.09	9.03	5.09	0.00	203.7
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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
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00			
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00		210.00	
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00			
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00			
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00			
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00			
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	HS20	-33.52	38.37	-25.78	29.52	-26.39	29.05	-20.30	22.35
OPER	2F1	-19.45	21.63	-14.97	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-27.00	30.54	-20.77	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-28.00	32.28	-21.54	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-25.47	28.86	-19.59	22.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.68	HS 33.44	60.2
HS20	2.79	2.80	HS 55.73	100.3
2F1	4.95	4.97	0.00	74.2
3F1	3.50	3.52	0.00	80.6
4F1	3.31	3.33	0.00	89.4
5C1	3.71	3.72	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 9.000 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.747

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	HS20	22.24	R	17.11	258.00	0.0	19.85	15.27	235.00		
		-109.54	R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00	
OPER	2F1	13.39	R	10.30	242.50	0.0	0.00	0.00	0.00		
		-44.52	L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	19.26	R	14.81	245.00	0.0	0.00	0.00	0.00		
		-70.38	R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	20.82	R	16.01	248.00	0.0	0.00	0.00	0.00		
		-83.21	R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	17.13	R	13.17	284.50	0.0	0.00	0.00	0.00		
		-66.15	R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.10	1.27	8.23	1.45	HS 25.44	45.8
HS20	15.16	2.12	13.72	2.41	HS 42.40	76.3
2F1	25.18	5.22	22.79	5.93	0.00	78.2
3F1	17.51	3.30	15.85	3.75	0.00	75.9
4F1	16.19	2.79	14.66	3.17	0.00	75.3
5C1	19.68	3.51	17.82	3.99	0.00	140.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-8.6	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	HS20	-38.42	38.37	-29.56	29.52	-29.25	29.05	-22.50	22.35
OPER	2F1	-21.64	21.63	-16.65	16.64	0.00	0.00	0.00	0.00
OPER	3F1	-30.57	30.54	-23.52	23.49	0.00	0.00	0.00	0.00
OPER	4F1	-32.33	32.28	-24.87	24.83	0.00	0.00	0.00	0.00
OPER	5C1	-28.84	28.86	-22.18	22.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.67	1.68	HS 33.44	60.2
HS20	2.79	2.80	HS 55.73	100.3
2F1	4.95	4.97	0.00	74.2
3F1	3.50	3.52	0.00	80.6
4F1	3.31	3.33	0.00	89.4
5C1	3.71	3.72	0.00	148.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.9 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	HS20	22.24 R	17.11	258.00	0.0	19.85	15.27	235.00	
		-109.54 R	-84.26	220.50	0.0	-99.28	-76.37	190.00	210.00
OPER	2F1	13.39 R	10.30	242.50	0.0	0.00	0.00	0.00	
		-44.52 L	-34.25	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	19.26 R	14.81	245.00	0.0	0.00	0.00	0.00	
		-70.38 R	-54.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	20.82 R	16.01	248.00	0.0	0.00	0.00	0.00	
		-83.21 R	-64.01	205.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	17.13 R	13.17	284.50	0.0	0.00	0.00	0.00	
		-66.15 R	-50.88	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.52	1.33	8.52	1.33	HS 26.61	47.9
HS20	14.20	2.22	14.20	2.22	HS 44.36	79.8
2F1	23.59	5.46	23.59	5.46	0.00	81.9
3F1	16.40	3.45	16.40	3.45	0.00	79.4
4F1	15.17	2.92	15.17	2.92	0.00	78.8

5C1	18.44	3.67	18.44	3.67	0.00	146.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -15.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50			
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50		
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00			
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00			
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00			
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00			
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	6.60	2.31	5.94	2.60	HS 46.09	83.0
HS20	11.01	3.84	9.90	4.33	HS 76.82	138.3
2F1	21.03	6.49	18.91	7.31	0.00	97.4
3F1	21.17	4.51	19.04	5.08	0.00	103.8
4F1	19.83	4.17	17.83	4.69	0.00	112.5
5C1	10.09	4.85	9.08	5.46	0.00	193.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.100		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.1	65.6
OPER	151.3	-123.4	109.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	HS20	-4.05	33.45	-3.12	25.73	-3.90	26.18	-3.00	20.14
OPER	2F1	-2.53	19.43	-1.95	14.95	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	26.96	-2.80	20.74	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	27.94	-3.02	21.49	0.00	0.00	0.00	0.00
OPER	5C1	-3.90	25.45	-3.00	19.58	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.28	1.96	HS 39.21	70.6
HS20	30.47	3.27	HS 65.36	117.6
2F1	48.72	5.63	0.00	84.4
3F1	33.87	4.05	0.00	93.3
4F1	31.44	3.91	0.00	105.6
5C1	31.69	4.30	0.00	171.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	HS20	18.28 R	14.06	230.50	0.0	28.81	22.16	202.50	
		-65.66 R	-50.51	209.00	0.0	-59.38	-45.68	190.00	212.50
OPER	2F1	15.07 R	11.60	212.50	0.0	0.00	0.00	0.00	
		-38.85 L	-29.89	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	14.98 L	11.52	155.00	0.0	0.00	0.00	0.00	
		-55.90 L	-43.00	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	15.99 L	12.30	151.00	0.0	0.00	0.00	0.00	
		-60.54 L	-46.57	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	31.41 L	24.16	155.50	0.0	0.00	0.00	0.00	
		-52.04 L	-40.03	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	6.16	2.40	6.16	2.40	HS 48.06	86.5
HS20	10.27	4.01	10.27	4.01	HS 80.09	144.2
2F1	19.63	6.77	19.63	6.77	0.00	101.5
3F1	19.75	4.70	19.75	4.70	0.00	108.2
4F1	18.50	4.34	18.50	4.34	0.00	117.3

5C1	9.42	5.05	9.42	5.05	0.00	202.1
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.80	28.67	28.67	1.699
			999999.000
			89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.1	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.8	-267.5	269.8	-299.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00			
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00		
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00			
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00			
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00			
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00			
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.74	3.15	2.45	3.53	HS 48.92	88.1
HS20	4.56	5.25	4.08	5.88	HS 81.54	146.8
2F1	7.06	8.06	6.31	9.02	0.00	94.7
3F1	5.79	5.60	5.18	6.27	0.00	119.1
4F1	6.29	5.17	5.62	5.79	0.00	139.7
5C1	4.98	5.97	4.46	6.68	0.00	178.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.6	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	HS20	-4.05	28.19	-3.12	21.69	-5.05	23.05	-3.88	17.73
OPER	2F1	-2.53	16.94	-1.95	13.03	0.00	0.00	0.00	0.00
OPER	3F1	-3.64	23.05	-2.80	17.73	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	23.67	-3.02	18.20	0.00	0.00	0.00	0.00
OPER	5C1	-5.87	21.87	-4.52	16.82	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.44	2.37	HS 47.32	85.2
HS20	24.07	3.94	HS 78.87	142.0
2F1	47.97	6.56	0.00	98.5
3F1	33.35	4.82	0.00	110.9
4F1	30.97	4.70	0.00	126.8
5C1	20.70	5.08	0.00	203.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03 HS20 HS20
 Check Point I. D. 9.200 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 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	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	HS20	66.18 R	50.90	233.00	0.0	49.84	38.34	205.00	
		-50.92 L	-39.17	167.00	0.0	-39.34	-30.26	190.00	140.00
OPER	2F1	42.73 R	32.87	215.00	0.0	0.00	0.00	0.00	
		-33.19 L	-25.53	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	52.12 R	40.09	219.00	0.0	0.00	0.00	0.00	
		-47.74 L	-36.73	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	48.01 R	36.93	219.00	0.0	0.00	0.00	0.00	
		-51.71 L	-39.77	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	60.55 L	46.58	158.00	0.0	0.00	0.00	0.00	
		-44.81 L	-34.47	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	3.28	2.54	3.28	HS 50.87	91.6
HS20	4.24	5.47	4.24	5.47	HS 84.79	152.6
2F1	6.57	8.39	6.57	8.39	0.00	98.5
3F1	5.38	5.83	5.38	5.83	0.00	123.8
4F1	5.84	5.38	5.84	5.38	0.00	145.3

5C1	4.63	6.21	4.63	6.21	0.00	185.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.7
 Superimposed Dead Load Moment 8.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	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	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50			
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00		
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00			
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00			
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00			
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00			
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.82	3.95	1.62	4.41	HS	58.4
HS20	3.04	6.59	2.70	7.34	HS	97.3
2F1	4.64	10.11	4.13	11.27	0.00	61.9
3F1	3.65	7.03	3.25	7.83	0.00	74.7
4F1	3.55	6.49	3.16	7.23	0.00	85.4
5C1	3.62	6.87	3.22	7.66	0.00	128.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	HS20	-5.07	22.82	-3.90	17.55	-7.59	19.76	-5.84	15.20
OPER	2F1	-4.03	14.27	-3.10	10.98	0.00	0.00	0.00	0.00
OPER	3F1	-4.39	18.99	-3.38	14.61	0.00	0.00	0.00	0.00
OPER	4F1	-3.93	19.42	-3.02	14.94	0.00	0.00	0.00	0.00
OPER	5C1	-8.12	18.31	-6.25	14.09	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.46	2.97	HS 59.45	107.0
HS20	15.76	4.95	HS 99.08	178.4
2F1	29.66	7.92	0.00	118.8
3F1	27.25	5.95	0.00	136.9
4F1	30.49	5.82	0.00	157.2
5C1	14.74	6.18	0.00	247.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.7
 Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	HS20	95.90 R	73.77	235.50	0.0	71.92	55.32	207.50	
		-42.22 L	-32.48	167.00	0.0	-33.47	-25.75	190.00	0.00
OPER	2F1	62.78 R	48.29	217.50	0.0	0.00	0.00	0.00	
		-27.52 L	-21.17	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.76 R	61.35	221.50	0.0	0.00	0.00	0.00	
		-39.59 L	-30.45	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.93 R	63.03	221.50	0.0	0.00	0.00	0.00	
		-42.88 L	-32.98	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	80.46 L	61.89	160.50	0.0	0.00	0.00	0.00	
		-40.50 L	-31.16	179.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.69	4.11	1.69	4.11	HS 33.78	60.8
HS20	2.82	6.84	2.82	6.84	HS 56.29	101.3
2F1	4.30	10.50	4.30	10.50	0.00	64.5
3F1	3.38	7.30	3.38	7.30	0.00	77.8
4F1	3.29	6.74	3.29	6.74	0.00	89.0

5C1	3.36	7.13	3.36	7.13	0.00	134.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00		0.00	
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00			
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00		0.00	
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00		0.00	
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00		0.00	
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00		0.00	
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00		0.00	
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.60	5.08	1.42	5.66	HS 28.36	51.0
HS20	2.66	8.47	2.36	9.43	HS 47.26	85.1
2F1	3.88	13.00	3.44	14.46	0.00	51.6
3F1	3.03	9.04	2.69	10.05	0.00	61.8
4F1	2.82	8.34	2.51	9.28	0.00	67.6
5C1	3.06	7.48	2.72	8.32	0.00	108.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.1	0.0	1.3
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.7	69.0
OPER	151.3	-117.8	114.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	HS20	-10.15	18.64	-7.81	14.34	-10.47	16.43	-8.05	12.64
OPER	2F1	-6.35	11.53	-4.89	8.87	0.00	0.00	0.00	0.00
OPER	3F1	-7.59	14.95	-5.84	11.50	0.00	0.00	0.00	0.00
OPER	4F1	-6.49	14.93	-4.99	11.48	0.00	0.00	0.00	0.00
OPER	5C1	-10.51	14.92	-8.09	11.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.75	3.70	HS 74.00	133.2
HS20	11.26	6.17	HS 123.33	222.0
2F1	18.54	9.97	0.00	149.5
3F1	15.52	7.69	0.00	176.8
4F1	18.15	7.70	0.00	207.9
5C1	11.21	7.70	0.00	308.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment Superimposed Dead Load Moment

1.1 14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	HS20	107.17 R	82.44	238.00	0.0	84.82	65.25	210.00	
		-33.53 L	-25.79	167.00	0.0	-29.61	-22.78	190.00	0.00
OPER	2F1	73.61 R	56.63	220.00	0.0	0.00	0.00	0.00	
		-21.85 L	-16.81	182.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	94.23 R	72.48	220.00	0.0	0.00	0.00	0.00	
		-31.43 L	-24.18	180.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	101.08 R	77.76	224.00	0.0	0.00	0.00	0.00	
		-34.05 L	-26.19	177.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	93.21 R	71.70	222.00	0.0	0.00	0.00	0.00	
		-37.97 L	-29.21	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	5.28	1.48	5.28	HS 29.56	53.2
HS20	2.46	8.79	2.46	8.79	HS 49.27	88.7
2F1	3.59	13.49	3.59	13.49	0.00	53.8
3F1	2.80	9.38	2.80	9.38	0.00	64.4
4F1	2.61	8.66	2.61	8.66	0.00	70.5

5C1	2.83	7.76	2.83	7.76	0.00	113.3
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.80	28.67	28.67	1.699	999999.000	89.824

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.2 15.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-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.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	HS20	105.00	R	80.77	226.50	0.0	89.43	68.79	212.50		
		-30.38	R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00	
OPER	2F1	74.76	L	57.51	202.50	0.0	0.00	0.00	0.00		
		-18.29	R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00	0.00
OPER	3F1	99.90	R	76.84	222.50	0.0	0.00	0.00	0.00		
		-26.30	R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	4F1	104.34	L	80.26	198.50	0.0	0.00	0.00	0.00		
		-28.43	R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	95.34	L	73.34	161.50	0.0	0.00	0.00	0.00		
		-38.29	R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.62	5.64	1.44	6.27	HS 28.80	51.8
HS20	2.70	9.39	2.40	10.44	HS 48.00	86.4
2F1	3.80	15.60	3.37	17.35	0.00	50.6
3F1	2.84	10.85	2.52	12.06	0.00	58.0
4F1	2.72	10.03	2.41	11.16	0.00	65.2
5C1	2.98	7.45	2.64	8.29	0.00	105.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

-0.1	-0.4	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.6	70.1
OPER	151.3	-115.9	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	HS20	-14.79	14.56	-11.38	11.20	-13.59	13.16	-10.45	10.12
OPER	2F1	-8.91	8.83	-6.86	6.80	0.00	0.00	0.00	0.00
OPER	3F1	-11.18	11.07	-8.60	8.52	0.00	0.00	0.00	0.00
OPER	4F1	-10.46	10.32	-8.04	7.94	0.00	0.00	0.00	0.00
OPER	5C1	-12.98	12.17	-9.99	9.36	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.70	4.81	HS 94.06	169.3
HS20	7.84	8.02	HS 156.76	282.2
2F1	13.01	13.22	0.00	195.1
3F1	10.37	10.55	0.00	238.4
4F1	11.09	11.32	0.00	299.4
5C1	8.93	9.60	0.00	357.2

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 9.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.2

Superimposed Dead Load Moment 15.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	HS20	105.00 R	80.77	226.50	0.0	89.43	68.79	212.50	
		-30.38 R	-23.37	258.00	0.0	-27.07	-20.82	235.00	0.00
OPER	2F1	74.76 L	57.51	202.50	0.0	0.00	0.00	0.00	
		-18.29 R	-14.07	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	99.90 R	76.84	222.50	0.0	0.00	0.00	0.00	
		-26.30 R	-20.23	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	104.34 L	80.26	198.50	0.0	0.00	0.00	0.00	
		-28.43 R	-21.87	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	95.34 L	73.34	161.50	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	5.85	1.50	5.85	HS 30.03	54.1
HS20	2.50	9.74	2.50	9.74	HS 50.05	90.1
2F1	3.52	16.19	3.52	16.19	0.00	52.7
3F1	2.63	11.26	2.63	11.26	0.00	60.5
4F1	2.52	10.41	2.52	10.41	0.00	68.0

5C1	2.76	7.73	2.76	7.73	0.00	110.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.8 12.0

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	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00			
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00		
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00			
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00			
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00			
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.61	4.13	1.43	4.60	HS 28.58	51.5
HS20	2.68	6.88	2.38	7.66	HS 47.64	85.8
2F1	3.92	11.43	3.48	12.73	0.00	52.3
3F1	3.07	7.95	2.73	8.85	0.00	62.7
4F1	2.86	7.35	2.54	8.19	0.00	68.6
5C1	3.19	6.96	2.84	7.75	0.00	113.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.4	71.3
OPER	151.3	-113.9	118.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	HS20	-18.91	9.92	-14.54	7.63	-16.86	10.04	-12.97	7.73
OPER	2F1	-11.62	6.29	-8.94	4.84	0.00	0.00	0.00	0.00
OPER	3F1	-15.07	7.48	-11.59	5.75	0.00	0.00	0.00	0.00
OPER	4F1	-15.06	6.33	-11.58	4.87	0.00	0.00	0.00	0.00
OPER	5C1	-15.45	9.64	-11.88	7.41	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.62	7.10	HS 72.31	130.2
HS20	6.03	11.83	HS 120.51	216.9
2F1	9.81	18.90	0.00	147.1
3F1	7.56	15.89	0.00	173.9
4F1	7.57	18.78	0.00	204.3
5C1	7.37	12.33	0.00	295.0

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 9.600

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 0.8

Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	HS20	107.38 L	82.60	187.00	0.0	83.25	64.04	215.00	
		-40.90 R	-31.46	258.00	0.0	-31.67	-24.36	235.00	0.00
OPER	2F1	73.40 L	56.46	205.00	0.0	0.00	0.00	0.00	
		-24.62 R	-18.94	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	93.85 L	72.19	205.00	0.0	0.00	0.00	0.00	
		-35.41 R	-27.24	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.69 L	77.45	201.00	0.0	0.00	0.00	0.00	
		-38.29 R	-29.45	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.18 L	69.37	203.00	0.0	0.00	0.00	0.00	
		-40.43 R	-31.10	244.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.49	4.29	1.49	4.29	HS 29.79	53.6
HS20	2.48	7.15	2.48	7.15	HS 49.64	89.4
2F1	3.63	11.87	3.63	11.87	0.00	54.5
3F1	2.84	8.25	2.84	8.25	0.00	65.3
4F1	2.65	7.63	2.65	7.63	0.00	71.5

5C1	2.96	7.23	2.96	7.23	0.00	118.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50			
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00		
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00			
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00			
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00			
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00			
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	3.19	1.66	3.56	HS 33.24	59.8
HS20	3.11	5.31	2.77	5.93	HS 55.39	99.7
2F1	4.76	8.82	4.24	9.85	0.00	63.6
3F1	3.74	6.13	3.34	6.85	0.00	76.8
4F1	3.65	5.67	3.25	6.34	0.00	87.9
5C1	3.98	6.16	3.55	6.88	0.00	142.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.700		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.0	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	HS20	-23.00	4.84	-17.69	3.73	-20.18	7.19	-15.53	5.53
OPER	2F1	-14.36	3.98	-11.04	3.06	0.00	0.00	0.00	0.00
OPER	3F1	-19.12	4.27	-14.71	3.28	0.00	0.00	0.00	0.00
OPER	4F1	-19.55	3.52	-15.04	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-18.72	7.32	-14.40	5.63	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.92	10.08	HS 58.47	105.2
HS20	4.87	16.80	HS 97.45	175.4
2F1	7.80	30.34	0.00	117.1
3F1	5.86	28.27	0.00	134.8
4F1	5.73	34.29	0.00	154.7
5C1	5.99	16.48	0.00	239.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 0.1
 Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	HS20	95.41 L	73.39	189.50	0.0	68.82	52.94	217.50	
		-51.42 R	-39.56	258.00	0.0	-36.28	-27.90	235.00	0.00
OPER	2F1	62.30 L	47.93	207.50	0.0	0.00	0.00	0.00	
		-30.95 R	-23.81	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	79.09 L	60.84	203.50	0.0	0.00	0.00	0.00	
		-44.53 R	-34.25	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	81.20 L	62.46	203.50	0.0	0.00	0.00	0.00	
		-48.14 R	-37.03	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	74.35 L	57.19	201.50	0.0	0.00	0.00	0.00	
		-44.33 R	-34.10	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.73	3.31	1.73	3.31	HS 34.59	62.3
HS20	2.88	5.52	2.88	5.52	HS 57.65	103.8
2F1	4.41	9.17	4.41	9.17	0.00	66.2
3F1	3.48	6.37	3.48	6.37	0.00	80.0
4F1	3.39	5.90	3.39	5.90	0.00	91.4

5C1	3.70	6.40	3.70	6.40	0.00	148.0
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.0 -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	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00			
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50		
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00			
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00			
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00			
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00			
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.85	2.52	2.56	2.83	HS 50.35	90.6
HS20	4.75	4.20	4.26	4.71	HS 83.91	151.0
2F1	7.35	6.97	6.59	7.83	0.00	98.9
3F1	6.05	4.85	5.43	5.44	0.00	111.4
4F1	6.57	4.48	5.89	5.03	0.00	121.0
5C1	5.99	5.21	5.37	5.85	0.00	208.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.800		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	HS20	-28.40	3.33	-21.85	2.56	-23.46	4.67	-18.05	3.59
OPER	2F1	-17.02	2.27	-13.09	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-23.17	3.26	-17.82	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-23.81	3.52	-18.32	2.71	0.00	0.00	0.00	0.00
OPER	5C1	-22.39	5.27	-17.22	4.06	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.33	15.76	HS 46.55	83.8
HS20	3.88	26.27	HS 77.58	139.6
2F1	6.47	54.06	0.00	97.1
3F1	4.76	37.58	0.00	109.4
4F1	4.63	34.83	0.00	124.9
5C1	4.92	23.24	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-1.0 -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	HS20	65.10 L	50.07	192.00	0.0	46.06	35.43	220.00	
		-61.95 R	-47.65	258.00	0.0	-41.69	-32.07	235.00	202.50
OPER	2F1	42.08 L	32.37	210.00	0.0	0.00	0.00	0.00	
		-37.29 R	-28.68	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	51.14 L	39.34	206.00	0.0	0.00	0.00	0.00	
		-53.64 R	-41.26	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	47.10 L	36.23	206.00	0.0	0.00	0.00	0.00	
		-57.99 R	-44.60	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	51.66 L	39.74	169.00	0.0	0.00	0.00	0.00	
		-49.91 R	-38.39	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.66	2.62	2.66	2.62	HS 52.43	94.4
HS20	4.43	4.37	4.43	4.37	HS 87.38	157.3
2F1	6.85	7.26	6.85	7.26	0.00	102.7
3F1	5.64	5.05	5.64	5.05	0.00	116.1
4F1	6.12	4.67	6.12	4.67	0.00	126.0

5C1	5.58	5.42	5.58	5.42	0.00	216.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50			
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50		
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00			
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00			
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00			
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00	0.00	
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00			
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	8.38	1.92	7.56	2.17	HS 38.42	69.2
HS20	13.96	3.20	12.59	3.62	HS 64.04	115.3
2F1	22.71	5.55	20.49	6.28	0.00	83.2
3F1	30.66	3.86	27.66	4.37	0.00	88.7
4F1	32.84	3.57	29.63	4.04	0.00	96.3
5C1	13.67	3.95	12.34	4.48	0.00	158.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	9.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.0	74.7
OPER	151.3	-108.3	124.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	HS20	-33.68	3.48	-25.90	2.68	-26.57	3.33	-20.44	2.56
OPER	2F1	-19.49	2.27	-14.99	1.74	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	3.26	-20.81	2.51	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	3.53	-21.59	2.72	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	3.52	-20.15	2.71	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.93	21.47	HS 38.59	69.5
HS20	3.22	35.78	HS 64.32	115.8
2F1	5.56	54.89	0.00	83.4
3F1	4.00	38.15	0.00	92.1
4F1	3.86	35.23	0.00	104.2
5C1	4.14	35.35	0.00	165.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.6 -24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 151.7	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
OPER 252.8	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	HS20	16.91 L	13.01	194.50	0.0	23.44	18.03	222.50	
		-75.60 L	-58.15	216.00	0.0	-65.17	-50.13	235.00	212.50
OPER	2F1	14.41 L	11.08	212.50	0.0	0.00	0.00	0.00	
		-43.62 R	-33.56	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	10.67 L	8.21	208.50	0.0	0.00	0.00	0.00	
		-62.75 R	-48.27	245.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	9.97 L	7.67	176.00	0.0	0.00	0.00	0.00	
		-67.84 R	-52.18	248.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	23.94 L	18.41	171.50	0.0	0.00	0.00	0.00	
		-61.22 R	-47.09	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.83	2.01	7.83	2.01	HS 40.13	72.2
HS20	13.05	3.34	13.05	3.34	HS 66.88	120.4
2F1	21.24	5.80	21.24	5.80	0.00	86.9
3F1	28.67	4.03	28.67	4.03	0.00	92.7
4F1	30.71	3.73	30.71	3.73	0.00	100.6

5C1	12.78	4.13	12.78	4.13	0.00	165.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	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
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	95.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		32.42		103.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	13.15	1.15	10.22	1.62	HS 22.91	41.2
HS20	21.92	1.91	17.04	2.70	HS 38.19	68.7
2F1	33.63	4.39	26.14	6.22	0.00	65.9
3F1	23.38	2.93	18.17	4.15	0.00	67.5
4F1	21.58	2.43	16.78	3.44	0.00	65.7
5C1	28.23	2.68	21.94	3.79	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	HS20	-33.68	40.86	-25.90	31.43	-26.57	29.69	-20.44	22.84
OPER	2F1	-19.49	22.27	-14.99	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-27.06	31.91	-20.81	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-28.06	34.28	-21.59	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-26.19	30.41	-20.15	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.65	1.77	HS 33.09	59.6
HS20	2.76	2.96	HS 55.15	99.3
2F1	4.91	5.43	0.00	73.7
3F1	3.48	3.79	0.00	80.0
4F1	3.29	3.52	0.00	88.7
5C1	3.59	3.97	0.00	143.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.57	1.20	10.57	1.20	HS 24.04	43.3
HS20	17.61	2.00	17.61	2.00	HS 40.06	72.1
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	106.535

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00			
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00		215.00	
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00			
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00		0.00	
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00			
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00		0.00	
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00			
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00		0.00	
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00			
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	13.15	1.15	10.22	1.62	HS 22.91	41.2
HS20	21.92	1.91	17.04	2.70	HS 38.19	68.7
2F1	33.63	4.39	26.14	6.22	0.00	65.9
3F1	23.38	2.93	18.17	4.15	0.00	67.5
4F1	21.58	2.43	16.78	3.44	0.00	65.7
5C1	28.23	2.68	21.94	3.79	0.00	107.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.000	2F1	
		3F1	
		4F1	
		5C1	

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-9.1	10.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	HS20	-38.59	40.86	-29.69	31.43	-29.41	29.69	-22.63	22.84
OPER	2F1	-21.66	22.27	-16.66	17.13	0.00	0.00	0.00	0.00
OPER	3F1	-30.61	31.91	-23.54	24.55	0.00	0.00	0.00	0.00
OPER	4F1	-32.38	34.28	-24.91	26.37	0.00	0.00	0.00	0.00
OPER	5C1	-29.69	30.41	-22.84	23.39	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.65	1.77	HS 33.09	59.6
HS20	2.76	2.96	HS 55.15	99.3
2F1	4.91	5.43	0.00	73.7
3F1	3.48	3.79	0.00	80.0
4F1	3.29	3.52	0.00	88.7
5C1	3.59	3.97	0.00	143.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-4.5 -44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	HS20	18.65 L	14.35	167.00	0.0	13.78	10.60	190.00	
		-114.96 R	-88.43	246.50	0.0	-106.66	-82.05	235.00	215.00
OPER	2F1	12.16 L	9.35	182.50	0.0	0.00	0.00	0.00	
		-49.96 R	-38.43	242.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	17.49 L	13.45	180.00	0.0	0.00	0.00	0.00	
		-74.79 L	-57.53	221.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	18.94 L	14.57	177.00	0.0	0.00	0.00	0.00	
		-90.16 L	-69.35	220.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	14.48 L	11.14	140.50	0.0	0.00	0.00	0.00	
		-81.93 R	-63.02	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.57	1.20	10.57	1.20	HS 24.04	43.3
HS20	17.61	2.00	17.61	2.00	HS 40.06	72.1
2F1	27.03	4.61	27.03	4.61	0.00	69.1
3F1	18.79	3.08	18.79	3.08	0.00	70.8
4F1	17.34	2.55	17.34	2.55	0.00	69.0

5C1	22.68	2.81	22.68	2.81	0.00	112.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	35.20	35.20	2.861
			999999.000
			89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

-2.0 -20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50			
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00		
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00			
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00			
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00			
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00			
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	8.57	2.58	7.67	2.93	HS 51.60	92.9
HS20	14.28	4.30	12.78	4.88	HS 85.99	154.8
2F1	25.70	7.27	22.99	8.26	0.00	109.0
3F1	24.29	5.05	21.73	5.74	0.00	116.2
4F1	22.75	4.66	20.36	5.30	0.00	126.0
5C1	11.68	5.13	10.45	5.82	0.00	205.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100HS20 HS20
2F1
3F1
4F1
5C1Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.9 0.0 8.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-85.2	73.6
OPER	172.1	-142.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	HS20	-0.71	36.40	-0.55	28.00	-1.49	27.15	-1.15	20.89
OPER	2F1	-0.49	20.47	-0.37	15.74	0.00	0.00	0.00	0.00
OPER	3F1	-0.70	28.87	-0.54	22.21	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	30.41	-0.58	23.39	0.00	0.00	0.00	0.00
OPER	5C1	-1.11	27.42	-0.85	21.09	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	57.06	2.02	HS 40.46	72.8
HS20	95.10	3.37	HS 67.44	121.4
2F1	292.06	6.00	0.00	89.9
3F1	203.01	4.25	0.00	97.8
4F1	188.14	4.04	0.00	109.0
5C1	127.80	4.48	0.00	179.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.100

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	HS20	13.98 L	10.75	162.00	0.0	26.76	20.59	227.50	
		-69.02 R	-53.10	234.00	0.0	-64.38	-49.53	215.00	240.00
OPER	2F1	14.88 R	11.44	237.50	0.0	0.00	0.00	0.00	
		-40.83 L	-31.41	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	15.74 L	12.11	180.00	0.0	0.00	0.00	0.00	
		-58.74 L	-45.18	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	16.80 L	12.93	176.00	0.0	0.00	0.00	0.00	
		-63.62 L	-48.94	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	32.73 L	25.18	180.50	0.0	0.00	0.00	0.00	
		-57.88 R	-44.52	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.95	2.69	7.95	2.69	HS 53.82	96.9
HS20	13.26	4.49	13.26	4.49	HS 89.69	161.4
2F1	23.85	7.58	23.85	7.58	0.00	113.7
3F1	22.55	5.27	22.55	5.27	0.00	121.2
4F1	21.12	4.87	21.12	4.87	0.00	131.4

5C1	10.84	5.35	10.84	5.35	0.00	213.9
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.66	35.20	35.20	2.861
			999999.000
			89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	165.00		
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00			
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	165.00		
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00			
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00	0.00		
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00			
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00	0.00		
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00			
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00	0.00		
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00			
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00	0.00		
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00			

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.04	3.43	2.70	3.87	HS 54.00	97.2
HS20	5.07	5.72	4.50	6.44	HS 90.00	162.0
2F1	7.88	8.78	7.00	9.89	0.00	105.0
3F1	6.36	6.10	5.65	6.87	0.00	130.0
4F1	6.81	5.63	6.05	6.34	0.00	152.1
5C1	5.53	6.46	4.92	7.27	0.00	196.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.200		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.7	0.0	7.0
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.1	74.8
OPER	172.1	-140.1	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	HS20	-1.08	31.40	-0.83	24.15	-3.15	24.42	-2.42	18.78
OPER	2F1	-1.56	18.38	-1.20	14.14	0.00	0.00	0.00	0.00
OPER	3F1	-1.30	25.44	-1.00	19.57	0.00	0.00	0.00	0.00
OPER	4F1	-0.75	26.13	-0.58	20.10	0.00	0.00	0.00	0.00
OPER	5C1	-2.80	24.15	-2.15	18.58	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.70	2.38	HS 47.63	85.7
HS20	44.50	3.97	HS 79.38	142.9
2F1	89.54	6.78	0.00	101.7
3F1	107.84	4.90	0.00	112.7
4F1	185.62	4.77	0.00	128.8
5C1	50.01	5.16	0.00	206.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.200

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 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. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00
OPER	HS20	71.18 R	54.76	258.00	0.0	52.92	40.70	230.00	
		-55.69 L	-42.84	192.00	0.0	-42.99	-33.07	215.00	165.00
OPER	2F1	45.75 R	35.19	240.00	0.0	0.00	0.00	0.00	
		-36.29 L	-27.92	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	56.69 R	43.61	244.00	0.0	0.00	0.00	0.00	
		-52.21 L	-40.16	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	52.94 R	40.72	248.00	0.0	0.00	0.00	0.00	
		-56.55 L	-43.50	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	65.17 L	50.13	183.00	0.0	0.00	0.00	0.00	
		-49.33 L	-37.95	203.00	0.0	0.00	0.00	0.00	0.00

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	2.81	3.57	2.81	3.57	HS 56.16	101.1
HS20	4.68	5.95	4.68	5.95	HS 93.59	168.5
2F1	7.28	9.13	7.28	9.13	0.00	109.2
3F1	5.88	6.34	5.88	6.34	0.00	135.2
4F1	6.29	5.86	6.29	5.86	0.00	158.2

5C1	5.11	6.72	5.11	6.72	0.00	204.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.7 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50			
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00		
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00			
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00			
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00			
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00			
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	4.13	1.64	4.63	HS 32.87	59.2
HS20	3.10	6.89	2.74	7.71	HS 54.78	98.6
2F1	4.88	10.56	4.31	11.83	0.00	64.6
3F1	3.78	7.34	3.33	8.22	0.00	76.6
4F1	3.68	6.78	3.25	7.59	0.00	87.8
5C1	3.81	7.77	3.36	8.70	0.00	134.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.300		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	75.9
OPER	172.1	-138.2	126.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	HS20	-3.36	25.94	-2.58	19.95	-5.16	21.53	-3.97	16.56
OPER	2F1	-3.16	16.05	-2.43	12.35	0.00	0.00	0.00	0.00
OPER	3F1	-3.43	21.68	-2.64	16.68	0.00	0.00	0.00	0.00
OPER	4F1	-2.52	22.18	-1.94	17.06	0.00	0.00	0.00	0.00
OPER	5C1	-4.78	20.67	-3.68	15.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.07	2.93	HS 58.55	105.4
HS20	26.78	4.88	HS 97.58	175.6
2F1	43.69	7.88	0.00	118.2
3F1	40.27	5.84	0.00	134.2
4F1	54.90	5.71	0.00	154.1
5C1	28.92	6.12	0.00	244.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.300

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 1.7
 Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	HS20	110.76 R	85.20	260.50	0.0	80.07	61.59	232.50	
		-48.73 L	-37.48	192.00	0.0	-37.62	-28.94	215.00	165.00
OPER	2F1	70.45 R	54.19	242.50	0.0	0.00	0.00	0.00	
		-31.76 L	-24.43	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	91.04 R	70.03	246.50	0.0	0.00	0.00	0.00	
		-45.69 L	-35.14	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	93.34 R	71.80	246.50	0.0	0.00	0.00	0.00	
		-49.48 L	-38.06	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	90.21 L	69.39	185.50	0.0	0.00	0.00	0.00	
		-43.16 L	-33.20	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.71	4.29	1.71	4.29	HS 34.25	61.7
HS20	2.85	7.15	2.85	7.15	HS 57.09	102.8
2F1	4.49	10.97	4.49	10.97	0.00	67.3
3F1	3.47	7.62	3.47	7.62	0.00	79.9
4F1	3.39	7.04	3.39	7.04	0.00	91.4

5C1	3.51	8.07	3.51	8.07	0.00	140.2
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		20.51		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.400

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00			
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00		
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00			
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00			
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00			
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00			
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.55	4.99	1.36	5.57	HS 27.26	49.1
HS20	2.59	8.32	2.27	9.29	HS 45.44	81.8
2F1	3.83	12.77	3.36	14.25	0.00	50.4
3F1	2.97	8.88	2.61	9.91	0.00	60.0
4F1	2.77	8.20	2.43	9.15	0.00	65.6
5C1	3.02	9.40	2.65	10.49	0.00	106.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.400		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.4	0.0	3.6
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.8	77.1
OPER	172.1	-136.3	128.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	HS20	-6.78	20.25	-5.22	15.58	-7.51	18.55	-5.78	14.27
OPER	2F1	-5.06	13.52	-3.89	10.40	0.00	0.00	0.00	0.00
OPER	3F1	-6.00	17.64	-4.62	13.57	0.00	0.00	0.00	0.00
OPER	4F1	-5.13	18.09	-3.94	13.92	0.00	0.00	0.00	0.00
OPER	5C1	-6.97	17.52	-5.36	13.48	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.89	3.81	HS 76.12	137.0
HS20	18.15	6.34	HS 126.87	228.4
2F1	26.94	9.50	0.00	142.5
3F1	22.70	7.28	0.00	167.4
4F1	26.58	7.10	0.00	191.7
5C1	19.54	7.33	0.00	293.2

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 10.400

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 2.8

Superimposed Dead Load Moment 25.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	HS20	128.16 R	98.59	263.00	0.0	98.93	76.10	235.00	
		-41.77 L	-32.13	192.00	0.0	-30.86	-23.74	215.00	0.00
OPER	2F1	86.60 R	66.61	245.00	0.0	0.00	0.00	0.00	
		-27.22 L	-20.94	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	111.66 R	85.89	245.00	0.0	0.00	0.00	0.00	
		-39.16 L	-30.12	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	119.88 R	92.22	249.00	0.0	0.00	0.00	0.00	
		-42.41 L	-32.62	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	109.76 R	84.43	247.00	0.0	0.00	0.00	0.00	
		-37.00 L	-28.46	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.42	5.18	1.42	5.18	HS 28.46	51.2
HS20	2.37	8.63	2.37	8.63	HS 47.43	85.4
2F1	3.51	13.24	3.51	13.24	0.00	52.6
3F1	2.72	9.20	2.72	9.20	0.00	62.6
4F1	2.54	8.50	2.54	8.50	0.00	68.5

5C1	2.77	9.74	2.77	9.74	0.00	110.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending			Modulus - Z
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.66	35.20	35.20	2.861	999999.000	89.602

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.500

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 32.2

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.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50			
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00		
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00			
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00			
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00			
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00			
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.44	6.12	1.26	6.82	HS 25.22	45.4
HS20	2.40	10.20	2.10	11.36	HS 42.03	75.7
2F1	3.51	15.66	3.08	17.43	0.00	46.2
3F1	2.58	10.88	2.26	12.12	0.00	51.9
4F1	2.42	10.05	2.12	11.19	0.00	57.2
5C1	2.70	11.52	2.36	12.82	0.00	94.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.500		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-80.6	78.2
OPER	172.1	-134.4	130.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	HS20	-10.80	16.77	-8.31	12.90	-10.18	15.50	-7.83	11.92
OPER	2F1	-7.23	10.81	-5.56	8.32	0.00	0.00	0.00	0.00
OPER	3F1	-9.00	14.12	-6.92	10.86	0.00	0.00	0.00	0.00
OPER	4F1	-8.23	14.21	-6.33	10.93	0.00	0.00	0.00	0.00
OPER	5C1	-9.33	14.97	-7.18	11.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.47	4.66	HS 93.29	167.9
HS20	12.45	7.77	HS 155.48	279.9
2F1	18.59	12.05	0.00	180.8
3F1	14.94	9.23	0.00	212.3
4F1	16.33	9.18	0.00	247.7
5C1	14.41	8.70	0.00	348.2

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 10.500

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 3.5

Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50	
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00
OPER	HS20	134.99 R	103.84	265.50	0.0	110.27	84.83	237.50	
		-34.80 L	-26.77	192.00	0.0	-25.72	-19.78	215.00	0.00
OPER	2F1	92.20 R	70.92	247.50	0.0	0.00	0.00	0.00	
		-22.68 L	-17.45	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	125.83 L	96.79	227.50	0.0	0.00	0.00	0.00	
		-32.63 L	-25.10	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	133.85 R	102.96	251.50	0.0	0.00	0.00	0.00	
		-35.34 L	-27.19	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	120.06 L	92.36	225.50	0.0	0.00	0.00	0.00	
		-30.83 L	-23.72	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.32	6.34	1.32	6.34	HS 26.36	47.4
HS20	2.20	10.57	2.20	10.57	HS 43.93	79.1
2F1	3.22	16.22	3.22	16.22	0.00	48.2
3F1	2.36	11.27	2.36	11.27	0.00	54.2
4F1	2.21	10.41	2.21	10.41	0.00	59.8

5C1	2.47	11.93	2.47	11.93	0.00	98.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00			
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00		
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00			
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00			
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00			
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00			
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.35	7.70	1.18	8.57	HS 23.59	42.5
HS20	2.25	12.84	1.97	14.29	HS 39.31	70.8
2F1	3.34	19.70	2.92	21.92	0.00	43.8
3F1	2.50	13.69	2.19	15.24	0.00	50.4
4F1	2.34	12.64	2.04	14.07	0.00	55.2
5C1	2.62	14.49	2.29	16.13	0.00	91.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.600		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear

0.0	0.0	0.1
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Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	HS20	-14.31	12.76	-11.01	9.82	-13.14	12.43	-10.11	9.56
OPER	2F1	-9.63	7.97	-7.41	6.13	0.00	0.00	0.00	0.00
OPER	3F1	-12.38	10.92	-9.53	8.40	0.00	0.00	0.00	0.00
OPER	4F1	-12.28	10.15	-9.44	7.81	0.00	0.00	0.00	0.00
OPER	5C1	-12.15	12.27	-9.35	9.44	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.55	6.22	HS 110.98	199.8
HS20	9.25	10.37	HS 184.97	332.9
2F1	13.74	16.60	0.00	206.2
3F1	10.69	12.12	0.00	245.9
4F1	10.78	13.05	0.00	291.1
5C1	10.89	10.79	0.00	431.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.600

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.7 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	HS20	143.13 R	110.10	254.00	0.0	110.70	85.15	240.00	
		-27.84 L	-21.42	192.00	0.0	-20.57	-15.82	215.00	0.00
OPER	2F1	96.32 L	74.09	230.00	0.0	0.00	0.00	0.00	
		-18.15 L	-13.96	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	128.49 L	98.84	230.00	0.0	0.00	0.00	0.00	
		-26.11 L	-20.08	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	137.69 L	105.92	226.00	0.0	0.00	0.00	0.00	
		-28.27 L	-21.75	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	122.83 L	94.48	228.00	0.0	0.00	0.00	0.00	
		-24.67 L	-18.97	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.23	7.98	1.23	7.98	HS 24.66	44.4
HS20	2.06	13.30	2.06	13.30	HS 41.10	74.0
2F1	3.05	20.41	3.05	20.41	0.00	45.8
3F1	2.29	14.18	2.29	14.18	0.00	52.6
4F1	2.14	13.10	2.14	13.10	0.00	57.7

5C1	2.39	15.01	2.39	15.01	0.00	95.8
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

3.5 32.2

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.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50			
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00		
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00			
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00			
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00			
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00			
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.36	10.20	1.19	11.36	HS 23.84	42.9
HS20	2.27	17.01	1.99	18.93	HS 39.73	71.5
2F1	3.53	26.09	3.09	29.05	0.00	46.4
3F1	2.68	18.14	2.35	20.19	0.00	54.0
4F1	2.57	16.75	2.25	18.65	0.00	60.7
5C1	2.77	19.20	2.42	21.37	0.00	97.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.700	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	HS20	-19.04	9.71	-14.65	7.47	-16.39	9.39	-12.61	7.22
OPER	2F1	-12.23	6.07	-9.41	4.67	0.00	0.00	0.00	0.00
OPER	3F1	-16.11	7.59	-12.39	5.84	0.00	0.00	0.00	0.00
OPER	4F1	-15.89	6.25	-12.22	4.81	0.00	0.00	0.00	0.00
OPER	5C1	-15.60	9.40	-12.00	7.23	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.11	8.30	HS 82.21	148.0
HS20	6.85	13.83	HS 137.01	246.6
2F1	10.67	22.14	0.00	160.1
3F1	8.10	17.68	0.00	186.2
4F1	8.21	21.47	0.00	221.7
5C1	8.36	14.29	0.00	334.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.700

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment 3.5
 Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	HS20	142.83 R	109.87	256.50	0.0	101.42	78.01	242.50	
		-20.88 L	-16.06	192.00	0.0	-15.43	-11.87	215.00	0.00
OPER	2F1	91.71 L	70.54	232.50	0.0	0.00	0.00	0.00	
		-13.61 L	-10.47	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	120.84 L	92.95	228.50	0.0	0.00	0.00	0.00	
		-19.58 L	-15.06	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	126.12 L	97.01	228.50	0.0	0.00	0.00	0.00	
		-21.21 L	-16.31	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	116.99 L	89.99	226.50	0.0	0.00	0.00	0.00	
		-18.50 L	-14.23	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor top fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.25	10.57	1.25	10.57	HS 24.91	44.8
HS20	2.08	17.62	2.08	17.62	HS 41.52	74.7
2F1	3.23	27.03	3.23	27.03	0.00	48.5
3F1	2.45	18.79	2.45	18.79	0.00	56.4
4F1	2.35	17.35	2.35	17.35	0.00	63.5

5C1	2.53	19.89	2.53	19.89	0.00	101.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.800

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Superimposed Dead Load
 Moment Moment

2.8 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00			
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00		
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00			
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00			
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00			
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00			
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.64	15.00	1.44	16.73	HS 28.81	51.9
HS20	2.73	25.00	2.40	27.89	HS 48.02	86.4
2F1	4.42	38.35	3.88	42.79	0.00	58.2
3F1	3.29	26.66	2.89	29.74	0.00	66.5
4F1	3.28	24.61	2.88	27.46	0.00	77.8
5C1	3.39	28.22	2.98	31.48	0.00	119.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.800	2F1	
		3F1	
		4F1	
		5C1	

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-77.1	81.7
OPER	172.1	-128.6	136.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	HS20	-24.23	6.54	-18.64	5.03	-19.88	6.41	-15.29	4.93
OPER	2F1	-14.98	4.08	-11.52	3.14	0.00	0.00	0.00	0.00
OPER	3F1	-20.12	4.17	-15.48	3.21	0.00	0.00	0.00	0.00
OPER	4F1	-20.19	3.43	-15.53	2.64	0.00	0.00	0.00	0.00
OPER	5C1	-19.51	6.32	-15.01	4.86	0.00	0.00	0.00	0.00

Rating

Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.18	12.50	HS 63.68	114.6
HS20	5.31	20.84	HS 106.13	191.0
2F1	8.58	33.34	0.00	128.7
3F1	6.39	32.65	0.00	146.9
4F1	6.37	39.65	0.00	171.9
5C1	6.59	21.55	0.00	263.6

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 10.800

Dead Load Moment 2.8

Superimposed Dead Load Moment 25.8

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	HS20	121.14 R	93.18	259.00	0.0	79.47	61.13	245.00	
		-13.92 L	-10.71	192.00	0.0	-10.29	-7.91	215.00	0.00
OPER	2F1	74.91 L	57.62	235.00	0.0	0.00	0.00	0.00	
		-9.07 L	-6.98	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	100.62 L	77.40	231.00	0.0	0.00	0.00	0.00	
		-13.05 L	-10.04	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	100.96 L	77.66	227.00	0.0	0.00	0.00	0.00	
		-14.14 L	-10.87	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	97.55 L	75.04	229.00	0.0	0.00	0.00	0.00	
		-12.33 L	-9.49	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top fiber +bend	Rating fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	15.55	1.50	15.55	HS 30.08	54.1
HS20	2.51	25.91	2.51	25.91	HS 50.13	90.2
2F1	4.05	39.76	4.05	39.76	0.00	60.8
3F1	3.02	27.64	3.02	27.64	0.00	69.4
4F1	3.01	25.52	3.01	25.52	0.00	81.2

5C1	3.11	29.25	3.11	29.25	0.00	124.5
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 10.900

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 1.6 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50			
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00		
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00			
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00		
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00			
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00		
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00			
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00		
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00			
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.76	28.97	2.44	32.44	HS 48.80	87.8
HS20	4.61	48.28	4.07	54.06	HS 81.33	146.4
2F1	7.68	74.08	6.78	82.96	0.00	101.7
3F1	5.63	51.49	4.97	57.66	0.00	114.3
4F1	5.51	47.54	4.86	53.24	0.00	131.3
5C1	5.80	54.50	5.12	61.03	0.00	204.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	10.900		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.0	82.9
OPER	172.1	-126.7	138.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	HS20	-29.78	3.29	-22.91	2.53	-23.60	3.52	-18.15	2.71
OPER	2F1	-17.86	2.05	-13.74	1.58	0.00	0.00	0.00	0.00
OPER	3F1	-24.36	2.61	-18.74	2.01	0.00	0.00	0.00	0.00
OPER	4F1	-24.90	2.82	-19.16	2.17	0.00	0.00	0.00	0.00
OPER	5C1	-23.66	4.11	-18.20	3.16	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.55	23.53	HS 51.03	91.9
HS20	4.25	39.22	HS 85.06	153.1
2F1	7.09	67.21	0.00	106.4
3F1	5.20	52.89	0.00	119.6
4F1	5.09	49.02	0.00	137.3
5C1	5.35	33.63	0.00	214.1

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 10.900

HS20 HS20
2F1
3F1
4F1
5C1

Dead Load Moment 1.6

Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	HS20	74.46 R	57.28	261.50	0.0	46.51	35.77	247.50	
		-6.96 L	-5.35	192.00	0.0	-5.14	-3.96	215.00	0.00
OPER	2F1	44.64 L	34.34	237.50	0.0	0.00	0.00	0.00	
		-4.54 L	-3.49	207.50	0.0	0.00	0.00	0.00	0.00
OPER	3F1	60.91 L	46.85	233.50	0.0	0.00	0.00	0.00	
		-6.53 L	-5.02	205.00	0.0	0.00	0.00	0.00	0.00
OPER	4F1	62.26 L	47.89	229.50	0.0	0.00	0.00	0.00	
		-7.07 L	-5.44	202.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	59.15 L	45.50	231.50	0.0	0.00	0.00	0.00	
		-6.17 L	-4.74	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.54	30.07	2.54	30.07	HS 50.85	91.5
HS20	4.24	50.12	4.24	50.12	HS 84.76	152.6
2F1	7.07	76.90	7.07	76.90	0.00	106.0
3F1	5.18	53.45	5.18	53.45	0.00	119.2
4F1	5.07	49.35	5.07	49.35	0.00	136.8

5C1	5.33	56.57	5.33	56.57	0.00	213.4
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SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 11.000

HS20 HS20
 2F1
 3F1
 4F1
 5C1

Dead Load Moment Superimposed Dead Load Moment
 0.0 0.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend	top fiber +bend	fiber -bend	bottom fiber +bend	fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	2F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	3F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	4F1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	fiber -bend	bottom fiber +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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D.	S03	HS20	HS20
Check Point I. D.	11.000		2F1
			3F1
			4F1
			5C1

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-74.9	79.9
OPER	172.1	-124.8	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	HS20	-35.63	0.00	-27.41	0.00	-27.51	2.63	-21.16	2.02
OPER	2F1	-20.82	0.00	-16.01	0.00	0.00	0.00	0.00	0.00
OPER	3F1	-28.77	0.00	-22.13	0.00	0.00	0.00	0.00	0.00
OPER	4F1	-29.87	0.00	-22.97	0.00	0.00	0.00	0.00	0.00
OPER	5C1	-27.99	0.00	-21.53	0.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.10	30.37	HS 42.01	75.6
HS20	3.50	50.62	HS 70.02	126.0
2F1	5.99	999.00	0.00	89.9
3F1	4.34	999.00	0.00	99.7
4F1	4.18	999.00	0.00	112.8
5C1	4.46	999.00	0.00	178.3

SERVICEABILITY RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S03

Check Point I. D. 11.000

Dead Load Moment 0.0

Superimposed Dead Load Moment 0.0

HS20 HS20
2F1
3F1
4F1
5C1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live w/imp.	Load 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	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.	top +bend	Rating fiber -bend	Factor bottom +bend	fiber -bend	Rating Value	Load Capacity (tons)
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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