

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B01 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	1.917	235.5	235.5	35.000	0.0
1	P	5.417	0.0	0.0	0.000	7.9
1	P	12.417	0.0	0.0	0.000	6.5
1	P	19.417	0.0	0.0	0.000	7.2
1	P	26.417	0.0	0.0	0.000	7.2
1	P	33.420	0.0	0.0	0.000	7.9

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.22	16.60	16.60	1.44	3.86
				17.20	16.60	16.60	1.44	3.86

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	Dy	Reinf. Fy
116.50	10.50	7.25	11.2	5.8	33000.

	Section Gross	Area Net	Neutral Axis Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
	73.80	73.80	17.66	18.64	16497.3	16497.3
n= 8	226.71	226.71	0.86	35.44	48790.0	16497.3
3n= 24	124.77	124.77	7.48	28.82	35673.1	16497.3

	Section Modulus				Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
	934.2	885.0	934.2	885.0	3001.54
n= 8	56771.8	1376.7	934.2	885.0	
3n= 24	4766.2	1238.0	934.2	885.0	

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	7.88	1.44	11.530	0.01	0.00	39.79	19.31
bott	8.30	1.44	11.530	84.00	21.76		20.48

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1209.183

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3001.54	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3490.54	7.18	0.00	0.00	0.000	5070.44

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 324.3
 Superimposed Dead Load Moment 237.9

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.	3042.3C	-1541.4	2271.5	-1800.9C	2002.9	-1523.0	1410.0	-1722.6
OPER	5070.4C	-2569.0	3785.8	-3001.5C	3338.2	-2538.3	2350.0	-2871.0

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	851.34 R	654.87	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	5C1T	660.67 R	508.21	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 bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.35	999.00	1.66	999.00	HS 33.12	59.6
5C1T	5.05	999.00	3.56	999.00	0.00	284.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment	Superimposed Dead Load Moment
324.3	237.9

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. 724.6	76027.2	-1239.4	2258.7	-1162.4	75465.0	-1801.6	1696.6	-1
OPER 874.3	100562.1	-2440.5	3389.8	-2312.2	99999.9	-3002.7	2827.6	-2

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	851.34 R	654.87	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	660.67 R	508.21	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	88.64	999.00	1.99	999.00	HS 39.86	71.7
5C1T	151.36	999.00	4.28	999.00	0.00	342.4

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B02 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	22.6
1	P	12.417	0.0	0.0	0.000	18.6
1	P	19.417	0.0	0.0	0.000	20.6
1	P	26.417	0.0	0.0	0.000	20.6
1	P	33.420	0.0	0.0	0.000	22.6

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	3000.	3000.	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	33.36	0.880	bott	15.73	16.60	16.60	1.57	3.93
				17.63	16.60	16.60	1.57	3.93

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
77.40	77.40	17.30	19.20	17296.1	17296.1
n= 8 230.31	230.31	1.00	35.50	49684.6	17296.1
3n= 24 128.37	128.37	7.56	28.94	36291.4	17296.1

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	999.7	900.9	999.7	900.9	3318.79
n= 8	49511.6	1399.7	999.7	900.9	
3n= 24	4803.1	1253.8	999.7	900.9	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	17.78
bott	8.30	1.57	10.570	84.00	21.35		19.92

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1305.287

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3318.79	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5489.88

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	565.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
585.5 577.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3293.9C	-1649.5	2309.5	-1991.3C	1836.1	-1966.6	1078.8	-2229.5
OPER	5489.9C	-2749.2	3849.2	-3318.8C	3060.1	-3277.6	1798.0	-3715.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	999.00	1.18	999.00	HS 23.61	42.5
5C1T	4.38	999.00	2.57	999.00	0.00	206.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B02
Check Point I. D. 1.474Dead Load Moment 585.5
Superimposed Dead Load Moment 577.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 109.9	57803.9	-1101.9	2424.4	-947.0	56641.1	-2264.8	1261.5	-2
OPER 516.4	95564.7	-2611.8	3265.4	-2353.6	94401.8	-3774.6	2102.5	-3

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	61.99	999.00	1.38	999.00	HS 27.61	49.7
5C1T	135.16	999.00	3.01	999.00	0.00	240.8

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B03 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	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	15.9
1	P	19.417	0.0	0.0	0.000	17.6
1	P	26.417	0.0	0.0	0.000	17.6
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.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.31	16.60	16.60	1.44	3.85
				17.11	16.60	16.60	1.44	3.85

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

Section Gross	Area Net	Neutral Axis Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
74.10	74.10	17.75	18.55	16617.2	16617.2
n= 8 227.01	227.01	0.91	35.39	49217.3	16617.2
3n= 24 125.07	125.07	7.56	28.74	35956.6	16617.2

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
	936.4	895.6	936.4	895.6	2990.08
n= 8	53966.0	1390.8	936.4	895.6	
3n= 24	4754.6	1251.2	936.4	895.6	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.41
bott	8.30	1.44	11.530	84.00	21.81		20.37

ASD - Moment Values

Cb	Iy	J	fb
top	bott		top
1.75	548.92	548.92	39.648
			0.000
			1194.931

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2990.08	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5175.47

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 582.2
 Superimposed Dead Load Moment 496.4

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.	3105.3C	-1545.1	2294.8	-1794.0C	1741.5	-1835.7	1118.1	-2027.2
OPER	5175.5C	-2575.1	3824.7	-2990.1C	2902.5	-3059.5	1863.4	-3378.7

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	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.91	999.00	1.22	999.00	HS 24.47	44.1
5C1T	4.16	999.00	2.67	999.00	0.00	213.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B03
Check Point I. D. 1.474Dead Load Moment 582.2
Superimposed Dead Load Moment 496.4

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	+bend	bottom fi
INV. 051.0	62157.0	-1036.4	2385.1	-972.4	61078.3	-2115.0	1306.5	-2
OPER 418.4	101078.5	-2446.3	3256.1	-2339.8	99999.9	-3525.0	2177.5	-3

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	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		Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	66.85	999.00	1.43	999.00	HS 28.60	51.5
5C1T	143.18	999.00	3.12	999.00	0.00	249.4

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B04 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.45	16.60	16.60	1.44	3.83
				16.97	16.60	16.60	1.44	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	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
74.80	74.80	17.89	18.41	16803.2	16803.2
n= 8 227.71	227.71	1.01	35.29	49948.4	16803.2
3n= 24 125.77	125.77	7.70	28.60	36428.9	16803.2

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
n= 8	939.2	912.8	939.2	912.8	2970.74
	49622.5	1415.2	939.2	912.8	
3n= 24	4730.9	1273.7	939.2	912.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.58
bott	8.30	1.44	11.530	84.00	21.91		20.20

ASD - Moment Values

Cb	Iy	J	fb
top	bott		top
1.75	548.92	548.92	39.648
			0.000
			1172.441

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2970.74	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5175.74

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
582.2 517.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3105.4C	-1549.7	2335.1	-1782.4C	1729.0	-1851.8	1136.5	-2030.9
OPER	5175.7C	-2582.8	3891.9	-2970.7C	2881.7	-3086.4	1894.1	-3384.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	999.00	1.24	999.00	HS 24.88	44.8
5C1T	4.13	999.00	2.71	999.00	0.00	217.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B04
Check Point I. D. 1.474Dead Load Moment 582.2
Superimposed Dead Load Moment 517.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 090.6	57169.1	-1032.3	2431.5	-990.9
OPER 484.3	94548.7	-2453.6	3319.3	-2384.6

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend
HS20	61.37	999.00	1.46	999.00
5C1T	133.80	999.00	3.18	999.00

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B05 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.9
1	P	12.417	0.0	0.0	0.000	16.4
1	P	19.417	0.0	0.0	0.000	18.1
1	P	26.417	0.0	0.0	0.000	18.1
1	P	33.420	0.0	0.0	0.000	19.9

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B05
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.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.57	16.60	16.60	1.44	3.82
				16.85	16.60	16.60	1.44	3.82

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
75.30	75.30	18.01	18.29	16954.0	16954.0
n= 8 228.21	228.21	1.08	35.22	50526.9	16954.0
3n= 24 126.27	126.27	7.81	28.49	36804.5	16954.0

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
Positive Top	Bending Bott.	Negative Top	Bending Bott.		
941.6	926.7	941.6	926.7	2955.65	
n= 8 46781.6	1434.6	941.6	926.7		
3n= 24 4714.1	1291.7	941.6	926.7		

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.72
bott	8.30	1.44	11.530	84.00	21.98		20.07

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	548.92	548.92	39.648
			0.000
			1154.818

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2955.65	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5175.96

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
582.2 510.7

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.	3105.6C	-1553.7	2367.1	-1773.4C	1733.2	-1850.9	1165.1	-2019.9
OPER	5176.0C	-2589.4	3945.2	-2955.6C	2888.6	-3084.8	1941.8	-3366.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	1.90	999.00	1.27	999.00	HS 25.50 45.9
5C1T	4.14	999.00	2.78	999.00	0.00 222.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B05
Check Point I. D. 1.474Dead Load Moment 582.2
Superimposed Dead Load Moment 510.7

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. 108.4	54026.4	-1038.8	2460.6	-1015.5	52933.5	-2131.7	1367.7	-2
OPER 513.9	89315.4	-2460.0	3372.3	-2421.0	88222.5	-3552.9	2279.4	-3

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	57.93	999.00	1.50	999.00	HS 29.94	53.9
5C1T	126.32	999.00	3.26	999.00	0.00	261.1

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B06 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	20.2
1	P	12.417	0.0	0.0	0.000	16.6
1	P	19.417	0.0	0.0	0.000	18.4
1	P	26.417	0.0	0.0	0.000	18.4
1	P	33.420	0.0	0.0	0.000	20.2

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.54	16.60	16.60	1.44	3.83
				16.88	16.60	16.60	1.44	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
75.10	75.10	17.98	18.32	16915.3	16915.3
n= 8 228.01	228.01	1.06	35.24	50378.0	16915.3
3n= 24 126.07	126.07	7.78	28.52	36707.9	16915.3

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	941.0	923.1	941.0	923.1	2959.51
n= 8	47475.0	1429.6	941.0	923.1	
3n= 24	4718.4	1287.1	941.0	923.1	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.69
bott	8.30	1.44	11.530	84.00	21.96		20.10

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1159.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2959.51	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5175.90

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
582.2 517.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3105.5C	-1552.6	2358.9	-1775.7C	1729.1	-1854.1	1154.7	-2025.7
OPER	5175.9C	-2587.7	3931.4	-2959.5C	2881.8	-3090.2	1924.5	-3376.2

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	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	1.89	999.00	1.26	999.00	HS 25.28 45.5
5C1T	4.13	999.00	2.76	999.00	0.00 220.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B06
Check Point I. D. 1.474Dead Load Moment 582.2
Superimposed Dead Load Moment 517.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 106.8	54768.3	-1035.2	2454.7	-1007.1
OPER 511.3	90547.3	-2458.3	3358.1	-2411.7

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend
HS20	58.74	999.00	1.48	999.00
5C1T	128.07	999.00	3.23	999.00

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B07 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	2.750	119.1	119.1	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	15.9
1	P	19.417	0.0	0.0	0.000	17.6
1	P	26.417	0.0	0.0	0.000	17.6
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. B07
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.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.62	16.60	16.60	1.44	3.82
				16.80	16.60	16.60	1.44	3.82

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
75.50	75.50	18.06	18.24	17030.9	17030.9
n= 8 228.41	228.41	1.12	35.18	50824.1	17030.9
3n= 24 126.47	126.47	7.86	28.44	36996.9	17030.9

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	942.8	933.9	942.8	933.9	2947.96
n= 8	45467.1	1444.6	942.8	933.9	
3n= 24	4705.7	1301.0	942.8	933.9	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.79
bott	8.30	1.44	11.530	84.00	22.01		20.00

ASD - Moment Values

Cb	Iy	J	fb
top	bott		top
1.75	548.92	548.92	39.648
			0.000
			1145.943

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2947.96	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5176.07

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 582.2
 Superimposed Dead Load Moment 496.4

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.	3105.6C	-1555.7	2383.6	-1768.8C	1741.8	-1843.9	1186.4	-2007.8
OPER	5176.1C	-2592.8	3972.6	-2948.0C	2903.0	-3073.1	1977.3	-3346.3

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	913.70	R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43	R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.91	999.00	1.30	999.00	HS 25.97	46.7
5C1T	4.16	999.00	2.83	999.00	0.00	226.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B07
Check Point I. D. 1.474Dead Load Moment 582.2
Superimposed Dead Load Moment 496.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend
INV. 111.0	52624.2	-1046.5	2471.9	-1032.4
OPER 518.4	86988.0	-2463.2	3400.8	-2439.8

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber	bottom fiber	top fiber	bottom fiber
bend	+bend	-bend	+bend	-bend
HS20	56.41	999.00	1.52	999.00
5C1T	123.00	999.00	3.33	999.00

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B08 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
1	W	2.750	119.1	119.1	33.330	0.0
1	P	5.417	0.0	0.0	0.000	22.6
1	P	12.417	0.0	0.0	0.000	18.6
1	P	19.417	0.0	0.0	0.000	20.6
1	P	26.417	0.0	0.0	0.000	20.6
1	P	33.420	0.0	0.0	0.000	22.6

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	3000.	3000.	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	33.36	0.880	bott	16.32	16.60	16.60	1.57	3.87
				17.04	16.60	16.60	1.57	3.87

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thk.	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
80.00	80.00	17.89	18.61	18131.9	18131.9
n= 8 232.91	232.91	1.38	35.12	52710.6	18131.9
3n= 24 130.97	130.97	8.10	28.40	38267.1	18131.9

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Top	Bending Bott.	Negative Top	Bending Bott.	
	1013.8	974.1	1013.8	974.1	3233.12
n= 8	38158.0	1500.9	1013.8	974.1	
3n= 24	4723.6	1347.5	1013.8	974.1	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.86	1.57	10.570	0.01	0.00	37.69	18.44
bott	8.30	1.57	10.570	84.00	21.69		19.26

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	598.47	598.47	50.535	0.000	1207.202

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	3233.12	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5497.00

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 585.5
Superimposed Dead Load Moment 577.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3298.2C	-1672.7	2476.5	-1939.9C	1839.4	-1984.4	1207.3	-2189.9
OPER	5497.0C	-2787.9	4127.6	-3233.1C	3065.6	-3307.4	2012.2	-3649.9

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	913.70	R	702.85	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	698.43	R	537.25	28.42	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	999.00	1.32	999.00	HS 26.43	47.6
5C1T	4.39	999.00	2.88	999.00	0.00	230.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	339.0	-260.8	260.8
OPER	565.1	-434.7	434.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B08
Check Point I. D. 1.474Dead Load Moment 585.5
Superimposed Dead Load Moment 577.4

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. 224.6	44955.1	-1123.9	2588.4	-1061.7	43792.2	-2286.8	1425.5	-2
OPER 707.7	74149.9	-2648.5	3538.8	-2544.8	72987.0	-3811.3	2375.9	-3

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	913.70 R	702.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	698.43 R	537.25	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	47.93	999.00	1.56	999.00	HS 31.20	56.2
5C1T	104.50	999.00	3.40	999.00	0.00	272.1

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 23.91

Comments:

Member I. D. B09 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	1.917	235.5	235.5	35.000	0.0
1	P	5.417	0.0	0.0	0.000	7.9
1	P	12.417	0.0	0.0	0.000	6.5
1	P	19.417	0.0	0.0	0.000	7.2
1	P	26.417	0.0	0.0	0.000	7.2
1	P	33.420	0.0	0.0	0.000	7.9

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. B09
 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.)	3000.	3000.	0.	0.

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top					
36.3	33.42	0.840	bott	16.37	16.60	16.60	1.44	3.85
				17.05	16.60	16.60	1.44	3.85

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

Section Gross	Area Net	Neutral Axis Top	Axis Bott.	Moment of Inertia Positive Bending	Inertia Negative Bending
74.30	74.30	17.81	18.49	16712.8	16712.8
n= 8 227.21	227.21	0.95	35.35	49526.8	16712.8
3n= 24 125.27	125.27	7.62	28.68	36167.6	16712.8

Section Modulus					Plastic Section Modulus - Z (Fy * Z)
	Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	
	938.5	903.8	938.5	903.8	2981.81
n= 8	52266.2	1400.9	938.5	903.8	
3n= 24	4748.9	1260.9	938.5	903.8	

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	7.88	1.44	11.530	0.01	0.00	39.79	19.49
bott	8.30	1.44	11.530	84.00	21.84		20.30

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	548.92	548.92	39.648	0.000	1184.115

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	2981.81	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2504.07	3794.29	6.16	0.00	0.00	0.000	5175.58

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	7.00	1.00	33000.	73.86	0.00	11.0	537.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 324.3
Superimposed Dead Load Moment 237.9

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.	3105.3C	-1548.5	2311.6	-1789.1C	2051.4	-1528.5	1440.8	-1713.5
OPER	5175.6C	-2580.9	3852.6	-2981.8C	3419.1	-2547.5	2401.4	-2855.9

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	851.34 R	654.87	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	5C1T	660.67 R	508.21	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 bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.41	999.00	1.69	999.00	HS 33.85	60.9
5C1T	5.18	999.00	3.63	999.00	0.00	290.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	322.4	-248.0	248.0
OPER	537.3	-413.3	413.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	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
5C1T	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. B09
Check Point I. D. 1.474Dead Load Moment 324.3
Superimposed Dead Load Moment 237.9

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. 754.0	70082.7	-1246.2	2298.0	-1191.8	69520.6	-1808.4	1735.8	-1
OPER 923.3	100562.1	-2451.8	3455.2	-2361.1	99999.9	-3014.0	2893.0	-2

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	851.34 R	654.87	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1T	660.67 R	508.21	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		Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	81.66	999.00	2.04	999.00	HS 40.78	73.4
5C1T	151.36	999.00	4.38	999.00	0.00	350.3

BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 8

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D.			S01		Symmetry:		
Span Length:			Span 1 23.917	Span 2 23.917	Span 3 23.917	Span 4 23.917	Span 5 23.917
			Span 6 23.917	Span 7 23.917	Span 8 23.917	Span 9 0.000	Span 10 0.000
Range	Length	-- Non-Composite:					
Span	Range	Range	Section	Section	Section	Hinge	Location
No.	No.	Length	Left	Right	Variation	No. 1	No. 2
1	1	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	1	0		0.0	0.0

Superimposed Dead Load:						
Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	765.0	765.0	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	765.0	765.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	765.0	765.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	765.0	765.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	765.0	765.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	765.0	765.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	765.0	765.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	765.0	765.0	23.917	0.0
8	P	11.958	0.0	0.0	0.000	0.1

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 1.000Dead Load Moment 0.0
Superimposed Dead Load Moment 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	0.00 R	0.00	0.00	0.00	0.0	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom 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
5C1T	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

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.08	31.19	-1.60	24.00	-2.12	24.40	-1.63	18.77
OPER	5C1T	-2.10	25.07	-1.62	19.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	35.12	2.09	HS 41.75	75.1
5C1T	59.08	4.33	0.00	346.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 1.000Dead 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	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	5C1T	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

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1T	999.00	999.00	999.00	999.00	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.5	-171.0	151.4	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.0	252.3	-317.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39			
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00		
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00			
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.75	32.92	2.44	36.61	HS 48.78	87.8
5C1T	5.59	56.69	4.97	63.05	0.00	397.2

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 5C1T

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.3	66.3
OPER	151.3	-122.2	110.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.01	25.95	-2.31	19.96	-3.12	20.89	-2.40	16.07
OPER	5C1T	-3.55	21.24	-2.73	16.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.53	2.56	HS 51.11	92.0
5C1T	34.42	5.20	0.00	416.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39	
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00	
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	2.54	34.16	2.54	34.16	HS 50.86	91.5
5C1T	5.18	58.82	5.18	58.82	0.00	414.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	163.6	-178.0	144.4	-197.2
OPER	300.6C	-268.7	268.7	-300.6C	272.6	-296.7	240.6	-328.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78			
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00		
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00			
		-10.06 R	-7.74	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.63	17.13	1.44	18.98	HS 28.74	51.7
5C1T	3.25	29.50	2.87	32.68	0.00	229.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.98	21.00	-4.60	16.15	-5.74	17.56	-4.42	13.51
OPER	5C1T	-5.41	17.54	-4.16	13.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.07	3.21	HS 64.28	115.7
5C1T	22.22	6.41	0.00	513.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.5	178.9	-156.4	178.9	-156.4	150.8	-184.5	150.8	-
OPER 307.5	279.4	-279.4	279.4	-279.4	251.3	-307.5	251.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78	
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00	
		-10.06 R	-7.74	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.50	17.75	1.50	17.75	HS 30.03	54.0
5C1T	3.00	30.57	3.00	30.57	0.00	239.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	159.4	-182.2	140.2	-201.4
OPER	300.6C	-268.7	268.7	-300.6C	265.7	-303.6	233.7	-335.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18			
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00		
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00			
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.35	11.69	1.19	12.92	HS 23.79	42.8
5C1T	2.64	20.13	2.32	22.25	0.00	185.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 1.300Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.8

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -71.0 68.7
OPER 151.3 -118.3 114.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.87	16.43	-6.82	12.64	-8.45	14.43	-6.50	11.10
OPER	5C1T	-8.18	14.03	-6.30	10.79	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.00	4.18	HS 83.60	150.5
5C1T	14.45	8.16	0.00	652.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
2.6 32.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.6	181.6	-153.6	181.6	-153.6	146.7	-188.6	146.7	-
OPER 314.4	279.4	-279.4	279.4	-279.4	244.4	-314.4	244.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18	
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00	
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.24	12.10	1.24	12.10	HS 24.88	44.8
5C1T	2.43	20.84	2.43	20.84	0.00	194.3

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	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. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.8
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	158.1	-183.5	138.9	-202.7
OPER	300.6C	-268.7	268.7	-300.6C	263.5	-305.8	231.5	-337.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57			
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00		
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00			
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.34	8.83	1.18	9.75	HS 23.58	42.4
5C1T	2.49	15.20	2.19	16.80	0.00	174.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.3	-116.3	116.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-11.85	12.31	-9.12	9.47	-11.20	11.52	-8.62	8.86
OPER	5C1T	-11.06	10.81	-8.51	8.32	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.89	5.67	HS 113.48	204.3
5C1T	10.52	10.77	0.00	841.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
2.8 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 189.9	182.5	-152.8	182.5	-152.8	145.3	-189.9	145.3	-
OPER 316.6	279.4	-279.4	279.4	-279.4	242.2	-316.6	242.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57	
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00	
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.23	9.14	1.23	9.14	HS 24.68	44.4
5C1T	2.29	15.74	2.29	15.74	0.00	183.0

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.1

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96			
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00		
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00	0.00	0.00			
		-25.14 R	-19.34	132.48	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	Rating Value	Load Capacity
HS20	1.40	7.01	1.24	7.74
5C1T	2.56	12.06	2.25	13.34

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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	71.0
OPER	151.3	-114.3	118.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.37	9.50	-11.82	7.31	-13.95	8.87	-10.73	6.82
OPER	5C1T	-13.29	8.43	-10.23	6.49	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.46	7.48	HS 89.27	160.7	
5C1T	8.60	14.05	0.00	688.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 1.500Dead Load Moment 2.6
Superimposed Dead Load Moment 32.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.4	181.5	-153.8	181.5	-153.8	146.9	-188.4	146.9	-
OPER 314.0	279.4	-279.4	279.4	-279.4	244.8	-314.0	244.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96	
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00	0.00	0.00	
		-25.14 R	-19.34	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.29	7.25	1.29	7.25	HS 25.86	46.5
5C1T	2.36	12.49	2.36	12.49	0.00	188.5

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	164.1	-177.5	144.9	-196.7
OPER	300.6C	-268.7	268.7	-300.6C	273.4	-295.9	241.4	-327.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35			
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00		
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00			
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.59	5.69	1.40	6.31	HS 28.03	50.5
5C1T	2.86	9.81	2.53	10.87	0.00	202.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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	-67.4	72.3
OPER	151.3	-112.3	120.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.34	6.62	-14.11	5.09	-16.67	6.50	-12.83	5.00
OPER	5C1T	-15.87	6.09	-12.21	4.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.67	10.91	HS 73.45	132.2	
5C1T	7.07	19.80	0.00	565.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 1.600Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.0	178.5	-156.8	178.5	-156.8	151.3	-184.0	151.3	-
OPER 306.6	279.4	-279.4	279.4	-279.4	252.2	-306.6	252.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35	
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00	
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.46	5.90	1.46	5.90	HS 29.28	52.7
5C1T	2.64	10.16	2.64	10.16	0.00	211.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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. S01
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.3	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74			
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48		81.32	
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00			
		-35.20 R	-27.08	132.48	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	1.93	4.68	1.71	HS 34.24	61.6
5C1T	3.72	8.06	3.30	0.00	264.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-22.80	2.98	-17.54	2.29	-19.32	4.42	-14.86	3.40
OPER	5C1T	-18.62	4.09	-14.33	3.15	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	2.90	16.61	HS 58.05
5C1T	5.92	29.94	0.00
			Load Capacity (tons)
			104.5
			473.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
1.1 14.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	264.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74	
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00	
		-35.20 R	-27.08	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.78	4.86	1.78	4.86	HS 35.69	64.2
5C1T	3.44	8.37	3.44	8.37	0.00	275.2

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13			
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32		
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00			
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.27	3.85	2.93	4.31	HS 58.55	105.4
5C1T	5.71	6.63	5.11	7.43	0.00	408.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.7
OPER	151.3	-108.3	124.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-27.72	1.03	-21.32	0.79	-21.85	2.66	-16.81	2.05
OPER	5C1T	-21.45	2.34	-16.50	1.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.34	28.04	HS 46.89	84.4
5C1T	5.05	53.28	0.00	404.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00	
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	3.04	4.01	3.04	4.01	HS 60.88	109.6
5C1T	5.31	6.90	5.31	6.90	0.00	424.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment	Superimposed Dead Load Moment
-1.8	-21.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.4	-147.1	175.3	-166.3
OPER	300.6C	-268.7	268.7	-300.6C	324.1	-245.2	292.1	-277.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53			
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48		9.57	
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00			
		-46.28 L	-35.60	-13.52	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.44	2.71	8.51	3.06	HS 54.18	97.5
5C1T	13.23	5.30	11.92	5.99	0.00	423.9

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S01
 Check Point I. D. 1.900
 HS20 5C1T

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.21	0.56	-24.77	0.43	-24.21	1.24	-18.62	0.95
OPER	5C1T	-24.44	0.88	-18.80	0.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.98	61.26	HS 39.62	71.3
5C1T	4.35	144.24	0.00	348.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-1.8 -21.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.6	158.3	-177.0	158.3	-177.0	181.7	-153.6	181.7	-
OPER 256.0	279.4	-279.4	279.4	-279.4	302.8	-256.0	302.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53	
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00	
		-46.28 L	-35.60	-13.52	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.83	2.83	8.83	2.83	HS 56.56	101.8
5C1T	12.36	5.53	12.36	5.53	0.00	442.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck 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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40			
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35		33.48	
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00			
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	15.10	1.30	13.72	1.49	HS 26.03	46.8
5C1T	29.98	3.00	27.24	3.43	0.00	239.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.21	33.50	-24.77	25.77	-24.21	26.13	-18.62	20.10
OPER	5C1T	-24.44	26.51	-18.80	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.73	1.90	HS 34.61	62.3
5C1T	3.85	3.99	0.00	307.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.1
5C1T	28.16	3.14	28.16	3.14	0.00	251.5

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	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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.699	999999.000	92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
 Moment Moment
 -3.8 -46.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	15.10	1.30	13.72	1.49	HS 26.03 46.8
5C1T	29.98	3.00	27.24	3.43	0.00 239.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.19	33.50	-27.84	25.77	-26.36	26.13	-20.28	20.10
OPER	5C1T	-27.13	26.51	-20.87	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.73	1.90	HS 34.61	62.3
5C1T	3.85	3.99	0.00	307.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 137.8	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
OPER 229.6	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.1
5C1T	28.16	3.14	28.16	3.14	0.00	251.5

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 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. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-2.1 -25.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.6	-144.9	177.4	-164.1
OPER	300.6C	-268.7	268.7	-300.6C	327.7	-241.6	295.7	-273.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31			
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27		
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00			
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.19	2.14	8.30	2.42	HS 42.84
5C1T	15.29	4.51	13.80	5.11	0.00 77.1 360.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.9	64.7
OPER	151.3	-124.9	107.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.79	29.37	-2.15	22.59	-2.89	23.54	-2.22	18.11
OPER	5C1T	-3.00	23.58	-2.31	18.14	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.95	2.20	HS 44.07	79.3
5C1T	41.62	4.57	0.00	366.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-2.1 -25.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 151.4	156.8	-178.5	156.8	-178.5	183.9	-151.4	183.9	-
OPER 252.3	279.4	-279.4	279.4	-279.4	306.5	-252.3	306.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31	
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00	
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.60	2.24	8.60	2.24	HS 44.74	80.5
5C1T	14.30	4.71	14.30	4.71	0.00	376.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
-0.7 -8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.8	-155.7	166.7	-174.9
OPER	300.6C	-268.7	268.7	-300.6C	309.7	-259.5	277.8	-291.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70			
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27		
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00			
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.13	2.78	2.80	3.13	HS 55.68
5C1T	6.64	5.63	5.96	6.32	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.79	24.68	-2.15	18.98	-4.29	20.73	-3.30	15.95
OPER	5C1T	-4.56	20.19	-3.50	15.53	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.18	2.67	HS 53.41	96.1
5C1T	26.97	5.44	0.00	435.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment	Superimposed Dead Load Moment
-0.7	-8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.2	164.0	-171.3	164.0	-171.3	173.1	-162.2	173.1	-
OPER 270.3	279.4	-279.4	279.4	-279.4	288.5	-270.3	288.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70	
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00	
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.91	2.90	2.91	2.90	HS 57.99	104.4
5C1T	6.19	5.86	6.19	5.86	0.00	468.9

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 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. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

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	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.9	-163.7	158.7	-182.9
OPER	300.6C	-268.7	268.7	-300.6C	296.5	-272.8	264.5	-304.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09			
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00		
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00	0.00			
		-42.29 L	-32.53	3.13	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.12	3.53	1.89	3.94	HS 37.88	68.2
5C1T	4.25	6.45	3.79	7.21	0.00	303.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.15	20.51	-3.96	15.77	-6.59	17.81	-5.07	13.70
OPER	5C1T	-6.39	16.67	-4.91	12.82	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.02	3.27	HS 65.44	117.8
5C1T	18.93	6.71	0.00	536.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 2.300Dead Load Moment 0.3
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.1	169.3	-166.0	169.3	-166.0	165.2	-170.1	165.2	-
OPER 283.5	279.4	-279.4	279.4	-279.4	275.3	-283.5	275.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	83.79 R	64.45	59.09	0.0	60.87	46.83
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00
		-42.29 L	-32.53	3.13	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.97	3.66	1.97	3.66	HS 39.42	71.0
5C1T	3.95	6.70	3.95	6.70	0.00	315.8

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 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. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48			
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00		
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00			
		-39.88 L	-30.68	-36.65	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.87	4.57	1.66	5.09	HS 33.16	59.7
5C1T	3.55	7.05	3.16	7.86	0.00	252.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.4	68.3
OPER	151.3	-118.9	113.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.55	17.12	-7.34	13.17	-9.16	14.86	-7.04	11.43
OPER	5C1T	-8.47	13.97	-6.51	10.75	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.47	3.99	HS 79.76	143.6
5C1T	14.05	8.15	0.00	651.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.2	172.7	-162.6	172.7	-162.6	160.1	-175.2	160.1	-
OPER 292.0	279.4	-279.4	279.4	-279.4	266.8	-292.0	266.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48	
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00	
		-39.88 L	-30.68	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	4.74	1.73	4.74	HS 34.56	62.2
5C1T	3.29	7.32	3.29	7.32	0.00	263.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.5	-171.0	151.3	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.1	252.2	-317.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88			
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35		0.00	
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00			
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	6.24	1.71	6.94	HS 34.13	61.4
5C1T	3.34	7.57	2.96	8.41	0.00	236.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-13.52	13.48	-10.40	10.37	-11.93	11.97	-9.17	9.21
OPER	5C1T	-10.75	11.58	-8.27	8.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.19	5.15	HS 103.04	185.5
5C1T	10.88	9.99	0.00	799.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88	
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00	
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.78	6.47	1.78	6.47	HS 35.58	64.0
5C1T	3.09	7.85	3.09	7.85	0.00	247.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.2	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.3	-284.0	253.3	-316.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27			
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00		
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00			
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.12	1.67	6.81	HS 33.43	60.2
5C1T	3.47	7.70	3.08	8.57	0.00	246.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-69.0 70.7
OPER	151.3	-114.9 117.8

Live Load Effect

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

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.02	9.38	-13.09	7.21	-14.82	9.23	-11.40	7.10
OPER	5C1T	-13.22	9.45	-10.17	7.27	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating	Factor	Rating
	(-)	(+)	Value
			Load Capacity (tons)
HS20	4.05	7.54	HS 81.04 145.9
5C1T	8.69	12.47	0.00 695.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.8	173.8	-161.5	173.8	-161.5	158.4	-176.8	158.4	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27	
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00	
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.35	1.74	6.35	HS 34.85	62.7
5C1T	3.21	8.00	3.21	8.00	0.00	256.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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 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. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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.	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	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66			
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00		
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00			
		-37.96 R	-29.20	155.62	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.80	1.91	5.35	HS 38.15	68.7
5C1T	4.08	7.33	3.63	8.17	0.00	290.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S01
 Check Point I. D. 2.700
 HS20 5C1T

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-20.39	4.89	-15.68	3.76	-17.75	6.71	-13.65	5.16
OPER	5C1T	-16.16	7.39	-12.43	5.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.32	10.72	HS 66.47	119.6	
5C1T	6.99	16.22	0.00	559.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66	
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00	
		-37.96 R	-29.20	155.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.98	1.99	4.98	HS 39.73	71.5
5C1T	3.78	7.61	3.78	7.61	0.00	302.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05			
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23		
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00			
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.37	103.3
5C1T	5.65	6.70	5.05	7.50	0.00	404.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.99	3.79	-19.22	2.92	-20.63	4.48	-15.87	3.45
OPER	5C1T	-19.38	5.47	-14.91	4.20	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.66	16.32	HS 53.29	95.9	
5C1T	5.72	22.28	0.00	458.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05	
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00	
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.65	107.4
5C1T	5.25	6.97	5.25	6.97	0.00	420.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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	190.2	-151.4	171.0	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.0	-252.3	285.1	-284.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44			
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88		
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00			
		-43.80 R	-33.69	158.79	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.88	2.77	7.09	3.12	HS 55.45	99.8
5C1T	11.18	5.76	10.06	6.49	0.00	460.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.3
OPER	151.3	-109.0	123.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.62	3.97	-22.79	3.06	-23.37	3.74	-17.97	2.88
OPER	5C1T	-22.61	3.75	-17.39	2.88	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.21	18.69	HS 44.15	79.5	
5C1T	4.82	33.02	0.00	385.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-1.3 -15.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.8	161.1	-174.2	161.1	-174.2	177.5	-157.8	177.5	-
OPER 263.0	279.4	-279.4	279.4	-279.4	295.8	-263.0	295.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44	
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00	
		-43.80 R	-33.69	158.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.35	2.89	7.35	2.89	HS 57.81	104.1
5C1T	10.44	6.01	10.44	6.01	0.00	480.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-2.8 -33.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.2	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08	L	15.45	-8.87	0.0	17.83	13.72	14.35		
		-95.40	L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40	
OPER	5C1T	16.07	L	12.36	-122.04	0.0	0.00	0.00	0.00		
		-59.27	L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.07	1.46	9.12	1.66	HS 29.21	52.6
5C1T	20.98	3.92	18.99	4.46	0.00	313.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.0
OPER	151.3	-107.0	106.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.62	33.80	-22.79	26.00	-23.37	25.99	-17.97	20.00
OPER	5C1T	-22.61	25.95	-17.39	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
5C1T	4.17	4.11	0.00	328.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment	Superimposed Dead Load Moment
-2.8	-33.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	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	9.44	1.53	9.44	1.53	HS 30.56	55.0
5C1T	19.66	4.10	19.66	4.10	0.00	327.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
-2.8 -33.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.2	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35			
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40		
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00			
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.07	1.46	9.12	1.66	HS 29.21	52.6
5C1T	20.98	3.92	18.99	4.46	0.00	313.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.0
OPER	151.3	-107.0	106.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.97	33.80	-26.13	26.00	-25.86	25.99	-19.89	20.00
OPER	5C1T	-25.68	25.95	-19.76	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
5C1T	4.17	4.11	0.00	328.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-2.8 -33.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.44	1.53	9.44	1.53	HS 30.56	55.0
5C1T	19.66	4.10	19.66	4.10	0.00	327.9

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
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. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -14.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.6	-151.9	170.4	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.1	-253.2	284.1	-285.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23			
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27		59.79	
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00			
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.61	2.73	6.84	3.08	54.66
5C1T	10.73	5.98	9.64	6.73	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.5	65.1
OPER	151.3	-124.2	108.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.84	29.42	-2.19	22.63	-3.20	23.47	-2.46	18.05
OPER	5C1T	-3.18	22.99	-2.45	17.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.30	2.21	HS 44.29	79.7
5C1T	39.02	4.72	0.00	377.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23	
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27	59.79
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00	
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.10	2.85	7.10	2.85	HS 56.98	102.6
5C1T	10.01	6.23	10.01	6.23	0.00	498.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	179.9	-161.7	160.7	-180.9
OPER	300.6C	-268.7	268.7	-300.6C	299.8	-269.5	267.8	-301.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62			
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36		
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00			
		-38.13 L	-29.33	-60.73	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	3.17	3.84	2.84	56.71	102.1
5C1T	5.47	7.07	4.89	0.00	391.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.84	24.77	-2.19	19.05	-4.45	20.70	-3.42	15.92
OPER	5C1T	-4.73	19.81	-3.64	15.24	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.68	HS 53.57	96.4
5C1T	25.81	5.58	0.00	446.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.200Dead Load Moment 0.0
Superimposed Dead Load Moment 0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.1	-168.1	167.1	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62	
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00	
		-38.13 L	-29.33	-60.73	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 58.99	106.2
5C1T	5.09	7.35	5.09	7.35	0.00	407.0

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 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. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.0	256.3	-313.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck 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	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01			
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00		
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00			
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.12	4.82	1.88	5.37	HS 37.70	67.9
5C1T	3.94	7.85	3.51	8.74	0.00	280.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.96	20.31	-3.81	15.63	-6.71	17.79	-5.16	13.69
OPER	5C1T	-6.65	16.57	-5.12	12.75	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.32	HS 66.47	119.7
5C1T	18.07	6.79	0.00	543.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00	
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.96	5.00	1.96	5.00	HS 39.28	70.7
5C1T	3.65	8.15	3.65	8.15	0.00	292.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

	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. S01
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40			
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27		0.00	
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00			
		-34.21 L	-26.32	27.93	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	1.85	6.21	1.64	6.90	59.1
5C1T	3.30	8.41	2.92	9.35	233.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.7

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -70.9 68.7
OPER 151.3 -118.2 114.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.38	16.93	-7.22	13.02	-9.27	14.84	-7.13	11.41
OPER	5C1T	-8.87	13.57	-6.82	10.44	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.56	4.06	HS 81.18	146.1
5C1T	13.33	8.44	0.00	675.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-160.0	175.3	-160.0	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00
		-34.21 L	-26.32	27.93	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	6.44	1.71	6.44	HS 34.28	61.7
5C1T	3.05	8.73	3.05	8.73	0.00	244.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

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	167.6	-174.0	148.4	-193.2
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79			
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00		
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	0.00	0.00			
		-34.26 R	-26.35	177.93	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	1.91	8.23	1.69	9.14	60.8
5C1T	3.16	8.46	2.80	9.40	224.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.500

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

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

Live Load Effect

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

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.39	13.39	-10.30	10.30	-12.04	11.93	-9.26	9.18
OPER	5C1T	-11.30	11.10	-8.69	8.54	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.21	5.22	HS 104.17	187.5
5C1T	10.29	10.50	0.00	823.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.89 L	67.61	45.79	0.0	59.79	
		-20.67 L	-15.90	15.05	0.0	38.27	0.00
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	
		-34.26 R	-26.35	177.93	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.76	8.54	HS 35.24	63.4
5C1T	2.92	8.78	0.00	233.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.600

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

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	169.3	-172.3	150.1	-191.5
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18			
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00		
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00			
		-35.16 R	-27.04	177.93	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	6.24	1.65	6.94	HS 33.00	59.4
5C1T	3.36	8.17	2.98	9.08	0.00	238.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.600

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	-16.92	9.37	-13.02	7.21	-14.95	9.16	-11.50	7.05
OPER	5C1T	-13.83	8.74	-10.64	6.72	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.05	7.59	HS 81.00	145.8	
5C1T	8.26	13.56	0.00	660.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 178.7	175.0	-160.2	175.0	-160.2	156.6	-178.7	156.6	-
OPER 297.9	279.4	-279.4	279.4	-279.4	260.9	-297.9	260.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18	
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00	
		-35.16 R	-27.04	177.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.72	6.47	1.72	6.47	HS 34.42	62.0
5C1T	3.11	8.47	3.11	8.47	0.00	248.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.700

	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 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. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.700

Dead Load Moment Superimposed Dead Load Moment
0.8 10.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.8	154.6	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.6	257.7	-311.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58			
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00		
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00			
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.13	4.84	1.90	37.99	68.4
5C1T	4.01	7.48	3.57	0.00	285.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.700

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	-20.31	4.94	-15.62	3.80	-17.90	6.61	-13.77	5.08
OPER	5C1T	-16.79	6.57	-12.92	5.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.94	HS 66.32	119.4
5C1T	6.68	18.33	0.00	534.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.57	71.2
5C1T	3.72	7.77	3.72	7.77	0.00	297.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.800

	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. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.800

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	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97			
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15		
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00			
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.39	103.3
5C1T	5.66	6.68	5.06	7.48	0.00	404.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.800

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	-66.2	73.5
OPER	151.3	-110.3	122.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.79	2.86	-19.07	2.20	-20.80	4.35	-16.00	3.35
OPER	5C1T	-20.08	4.67	-15.45	3.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	16.90	HS 53.37	96.1
5C1T	5.49	26.25	0.00	439.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.800

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97	
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00	
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	3.99	2.98	3.99	HS 59.68	107.4
5C1T	5.26	6.95	5.26	6.95	0.00	420.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.900

	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. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-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	191.4	-150.2	172.2	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	319.0	-250.3	287.0	-282.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36			
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79		
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00			
		-44.23 R	-34.02	181.93	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.08	2.75	7.27	3.10	HS 54.95	98.9
5C1T	11.56	5.66	10.40	6.38	0.00	452.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.900

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	2.99	-22.64	2.30	-23.57	3.15	-18.13	2.42
OPER	5C1T	-23.31	3.07	-17.93	2.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.73	HS 44.14	79.4
5C1T	4.64	40.50	0.00	371.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 3.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.6	160.3	-175.0	160.3	-175.0	178.6	-156.6	178.6	-
OPER 261.1	279.4	-279.4	279.4	-279.4	297.7	-261.1	297.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00	
		-44.23 R	-34.02	181.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.54	2.87	7.54	2.87	HS 57.31	103.2
5C1T	10.79	5.90	10.79	5.90	0.00	472.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	13.24	1.44	12.00	1.65	52.0
5C1T	27.07	3.83	24.52	4.37	306.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	33.80	-22.64	26.00	-23.57	26.06	-18.13	20.04
OPER	5C1T	-23.31	26.09	-17.93	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
5C1T	4.04	4.08	0.00	323.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
5C1T	25.38	4.01	25.38	4.01	0.00	320.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

Non-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. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.401

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

Dead Load Superimposed Dead Load
Moment Moment
-3.0 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32		
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	13.24	1.44	12.00	1.65	HS 28.87
5C1T	27.07	3.83	24.52	4.37	0.00 306.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.81	33.80	-26.01	26.00	-26.09	26.06	-20.07	20.04
OPER	5C1T	-26.30	26.09	-20.23	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
5C1T	4.04	4.08	0.00	323.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
5C1T	25.38	4.01	25.38	4.01	0.00	320.9

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 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. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.537

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-17.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.0	172.3	-169.2
OPER	300.6C	-268.7	268.7	-300.6C	319.2	-250.1	287.2	-282.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14			
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71		
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00			
		-45.02 L	-34.63	-38.42	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.98	2.74	7.18	3.09	HS 54.83	98.7
5C1T	11.81	5.55	10.63	6.26	0.00	444.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.100

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	29.42	-2.19	22.63	-3.15	23.54	-2.42	18.10
OPER	5C1T	-3.04	23.11	-2.34	17.77	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.72	2.21	HS 44.20	79.6
5C1T	40.92	4.69	0.00	375.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-17.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.5	160.2	-175.1	160.2	-175.1	178.8	-156.5	178.8	-
OPER 260.8	279.4	-279.4	279.4	-279.4	298.0	-260.8	298.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14	
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00	
		-45.02 L	-34.63	-38.42	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	7.45	2.86	7.45	2.86	HS 57.19	102.9
5C1T	11.02	5.79	11.02	5.79	0.00	463.5

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 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. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.537

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.200

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53			
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35		
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00			
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.48	103.5
5C1T	5.72	6.55	5.11	7.34	0.00	408.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.200

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.38	20.77	-3.37	15.98
OPER	5C1T	-4.59	19.89	-3.53	15.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.75	2.67	HS 53.45	96.2
5C1T	26.64	5.55	0.00	443.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.200

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00	
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.76	107.6
5C1T	5.31	6.82	5.31	6.82	0.00	425.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.537

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.5

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.4	-310.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93			
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00		
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	0.00			
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.82	1.90	5.37	HS 38.10	68.6
5C1T	4.04	7.36	3.59	8.20	0.00	287.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.300

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.2	67.4
OPER	151.3	-120.4	112.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.94	20.30	-3.80	15.62	-6.65	17.86	-5.11	13.74
OPER	5C1T	-6.52	16.62	-5.02	12.78	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.87	3.32	HS 66.40	119.5
5C1T	18.46	6.76	0.00	540.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.300Dead Load Moment 0.7
Superimposed Dead Load Moment 9.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 R	62.62	106.93	0.0	61.47	78.93	
		-34.71 L	-26.70	38.97	0.0	-28.30	62.18	0.00
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.98	5.01	1.98	5.01	HS 39.68	71.4
5C1T	3.74	7.64	3.74	7.64	0.00	299.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.400

	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 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. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.537

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	169.9	-171.7	150.7	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32			
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00		
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00			
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.87	6.22	1.66	6.91	HS 33.12	59.6
5C1T	3.39	8.03	3.01	8.93	0.00	240.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.2 0.0 1.9

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -71.1 68.6
OPER 151.3 -118.4 114.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.37	16.91	-7.21	13.01	-9.20	14.91	-7.08	11.47
OPER	5C1T	-8.72	13.65	-6.71	10.50	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.58	4.05	HS 81.10	146.0
5C1T	13.58	8.38	0.00	670.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.400

Dead Load Moment Superimposed Dead Load Moment
1.3 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.6	174.6	-160.6	157.1	-178.1	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32	
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00	
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.73	6.45	1.73	6.45	HS 34.54	62.2
5C1T	3.13	8.33	3.13	8.33	0.00	250.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.500

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

Non-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. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.537

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.77		104.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.83	L	67.56	69.71	0.0	77.68	59.75	83.71		
		-20.50	L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00	
OPER	5C1T	87.09	L	66.99	32.71	0.0	0.00	0.00	0.00		
		-34.42	L	-26.47	-34.42	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	8.12	1.70	9.02	HS 33.96	61.1
5C1T	3.22	8.39	2.85	9.32	0.00	228.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.0 0.0 0.1

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.38	13.38	-10.29	10.29	-11.98	12.00	-9.21	9.23
OPER	5C1T	-11.12	11.15	-8.55	8.58	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.21	HS 104.28	187.7
5C1T	10.48	10.43	0.00	834.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.500Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.5	279.4	-279.4	279.4	-279.4	259.3	-299.5	259.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	5C1T	87.09 L	66.99	32.71	0.0	0.00	0.00	0.00	
		-34.42 L	-26.47	-34.42	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.77	8.42	1.77	8.42	HS 35.43	63.8
5C1T	2.98	8.70	2.98	8.70	0.00	238.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.600

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	169.7	-171.8	150.5	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	282.9	-286.4	250.9	-318.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10			
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00		
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00			
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.87	6.23	1.65	HS 33.10	59.6
5C1T	3.38	8.20	2.99	0.00	239.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-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	-16.91	9.37	-13.01	7.21	-14.88	9.23	-11.45	7.10
OPER	5C1T	-13.64	8.76	-10.49	6.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.58	HS 81.17	146.1	
5C1T	8.39	13.50	0.00	671.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.600Dead Load Moment 1.3
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.7	-160.5	174.7	-160.5	157.0	-178.3	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10	
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00	
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	6.46	1.73	6.46	HS 34.51	62.1
5C1T	3.12	8.51	3.12	8.51	0.00	249.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700

	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. S01
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.700

Dead Load Moment 0.8
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	-279.3	258.0	-311.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49			
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00		
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00			
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.83	1.90	5.39	HS 38.03	68.5
5C1T	4.04	7.50	3.59	8.36	0.00	287.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.700

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-20.30	4.94	-15.62	3.80	-17.84	6.68	-13.72	5.14
OPER	5C1T	-16.59	6.58	-12.76	5.06	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.32	10.81	66.46
5C1T	6.78	18.29	0.00
			Load Capacity (tons)
			119.6
			542.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49	
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00	
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.61	71.3
5C1T	3.74	7.79	3.74	7.79	0.00	299.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88			
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07		
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00			
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.34	103.2
5C1T	5.63	6.70	5.03	7.50	0.00	402.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.800

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.74	4.41	-15.96	3.40
OPER	5C1T	-19.87	4.66	-15.28	3.58	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.67	16.62	HS 53.50	96.3	
5C1T	5.56	26.26	0.00	444.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.800

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88	
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00	
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.900

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

Non-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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-283.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28			
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71		
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00			
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.99	2.76	7.19	3.11	HS 55.11	99.2
5C1T	11.43	5.69	10.28	6.41	0.00	455.0

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S01
Check Point I. D. 4.900

HS20 5C1T

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

-0.6 -7.3 0.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.97	-22.63	2.28	-23.51	3.18	-18.08	2.44
OPER	5C1T	-23.07	3.09	-17.74	2.38	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.46	HS 44.24	79.6
5C1T	4.70	40.24	0.00	376.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 4.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.3

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.1	160.6	-174.7	160.6	-174.7	178.2	-157.1	178.2	-
OPER 261.8	279.4	-279.4	279.4	-279.4	297.0	-261.8	297.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28	
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00	
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	7.46	2.87	7.46	2.87	HS 57.46	103.4
5C1T	10.66	5.93	10.66	5.93	0.00	474.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -35.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.9	184.5	-157.1
OPER	300.6C	-268.7	268.7	-300.6C	339.5	-229.8	307.5	-261.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00			
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	12.98	1.45	11.76	1.65	HS 29.03
5C1T	26.81	3.88	24.28	4.42	0.00 310.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

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

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

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	-29.42	33.80	-22.63	26.00	-23.51	26.03	-18.08	20.02
OPER	5C1T	-23.07	26.04	-17.74	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.81	68.1
5C1T	4.09	4.09	0.00	327.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -35.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.17	1.52	12.17	1.52	HS 30.39	54.7
5C1T	25.13	4.06	25.13	4.06	0.00	324.8

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	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. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -35.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.9	184.5	-157.1
OPER	300.6C	-268.7	268.7	-300.6C	339.5	-229.8	307.5	-261.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00			
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.98	1.45	11.76	1.65	HS 29.03 52.3
5C1T	26.81	3.88	24.28	4.42	0.00 310.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

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

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

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	-33.80	33.80	-26.00	26.00	-26.03	26.03	-20.02	20.02
OPER	5C1T	-26.04	26.04	-20.03	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.81	68.1
5C1T	4.09	4.09	0.00	327.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-35.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	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	12.17	1.52	12.17	1.52	HS 30.39	54.7
5C1T	25.13	4.06	25.13	4.06	0.00	324.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.100

	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. S01
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-283.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06			
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63		
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00	0.00			
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.86	2.76	7.07	3.11	HS 55.11	99.2
5C1T	11.43	5.69	10.28	6.41	0.00	455.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.100

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	29.42	-2.19	22.63	-3.18	23.51	-2.44	18.08
OPER	5C1T	-3.09	23.07	-2.38	17.74	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.46	2.21	HS 44.24	79.6
5C1T	40.24	4.70	0.00	376.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.1	160.6	-174.7	160.6	-174.7	178.2	-157.1	178.2	-
OPER 261.8	279.4	-279.4	279.4	-279.4	297.0	-261.8	297.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06	
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00	0.00	
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.34	2.87	7.34	2.87	HS 57.46	103.4
5C1T	10.66	5.93	10.66	5.93	0.00	474.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.200

	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 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45			
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10		38.27	
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00			
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.34	103.2
5C1T	5.63	6.70	5.03	7.50	0.00	402.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.200

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.41	20.74	-3.40	15.96
OPER	5C1T	-4.66	19.87	-3.58	15.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.62	2.67	HS 53.50	96.3
5C1T	26.26	5.56	0.00	444.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.200

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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45	
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00	
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.300

Dead Load Moment 0.8
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	-279.3	258.0	-311.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84			
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00		
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00	0.00			
		-37.24 L	-28.65	-12.12	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.83	1.90	5.39	HS 38.03	68.5
5C1T	4.04	7.50	3.59	8.36	0.00	287.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.94	20.30	-3.80	15.62	-6.68	17.84	-5.14	13.72
OPER	5C1T	-6.58	16.59	-5.06	12.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.81	3.32	HS 66.46	119.6
5C1T	18.29	6.78	0.00	542.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84	
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00	0.00	
		-37.24 L	-28.65	-12.12	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.61	71.3
5C1T	3.74	7.79	3.74	7.79	0.00	299.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.400

	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. S01
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	169.7	-171.8	150.5	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	282.9	-286.4	250.9	-318.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23			
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00		
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00			
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor		Load Capacity (tons)		Rating Value
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	
HS20	1.87	6.23	1.65	6.92	HS 33.10
5C1T	3.38	8.16	2.99	9.07	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.8

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -71.0 68.6
OPER 151.3 -118.3 114.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.37	16.91	-7.21	13.01	-9.23	14.88	-7.10	11.45
OPER	5C1T	-8.76	13.64	-6.74	10.49	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.58	4.06	HS 81.17	146.1
5C1T	13.50	8.39	0.00	671.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.400Dead Load Moment 1.3
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.7	-160.5	174.7	-160.5	157.0	-178.3	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23	
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00	
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.73	6.46	1.73	6.46	HS 34.51	62.1
5C1T	3.12	8.47	3.12	8.47	0.00	249.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.500

	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. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	101.047

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63			
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15		0.00	
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00			
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	8.12	1.70	9.02	HS 33.96	61.1
5C1T	3.22	8.39	2.85	9.32	0.00	228.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.500

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-13.38	13.38	-10.29	10.29	-12.00	11.98	-9.23	9.21
OPER	5C1T	-11.15	11.12	-8.58	8.55	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.22	HS 104.33	187.8
5C1T	10.44	10.47	0.00	835.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.500Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.5	279.4	-279.4	279.4	-279.4	259.3	-299.5	259.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63	
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00	
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.77	8.42	1.77	8.42	HS 35.43	63.8
5C1T	2.98	8.70	2.98	8.70	0.00	238.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.600

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

Non-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. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.840

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	169.9	-171.7	150.7	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02			
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15		0.00	
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00			
		-35.51 R	-27.31	225.76	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	1.87	6.22	1.66	HS 33.12	59.6
5C1T	3.39	8.06	3.01	0.00	240.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.600

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.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.91	9.37	-13.01	7.21	-14.91	9.20	-11.47	7.08
OPER	5C1T	-13.65	8.72	-10.50	6.71	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.05	7.58	HS 81.10	146.0	
5C1T	8.38	13.58	0.00	670.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.6	174.6	-160.6	157.1	-178.1	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00
		-35.51 R	-27.31	225.76	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.73	6.45	1.73	6.45	HS 34.54	62.2
5C1T	3.13	8.36	3.13	8.36	0.00	250.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.700

	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. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.840

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.5

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.4	-310.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41			
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15		0.00	
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00	0.00			
		-37.90 R	-29.16	227.37	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.82	1.90	5.37	HS 38.10	68.6
5C1T	4.04	7.36	3.60	8.20	0.00	287.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.700

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	-112.3	120.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.30	4.94	-15.62	3.80	-17.86	6.65	-13.74	5.11
OPER	5C1T	-16.62	6.52	-12.78	5.02	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.32	10.87	HS 66.40	119.5	
5C1T	6.76	18.46	0.00	540.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.700Dead Load Moment 0.7
Superimposed Dead Load Moment 9.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	81.41 L	62.62	84.41	0.0	61.47	47.28
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00
		-37.90 R	-29.16	227.37	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.98	5.01	1.98	5.01
5C1T	3.74	7.64	3.74	7.64

HS 39.68 71.4
0.00 299.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.840

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80			
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98		
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00			
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.48	103.5
5C1T	5.72	6.55	5.11	7.34	0.00	408.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.800

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.77	4.38	-15.98	3.37
OPER	5C1T	-19.89	4.59	-15.30	3.53	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	16.75	HS 53.45	96.2
5C1T	5.55	26.64	0.00	443.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.800

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80	
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00	
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.76	107.6
5C1T	5.31	6.82	5.31	6.82	0.00	425.1

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 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. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.840

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -17.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.0	172.3	-169.2
OPER	300.6C	-268.7	268.7	-300.6C	319.2	-250.1	287.2	-282.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19			
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63		
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00			
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	8.11	2.74	7.30	3.09	54.83
5C1T	11.81	5.55	10.63	6.26	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.900Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

-0.6 -7.4 0.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.97	-22.63	2.28	-23.54	3.15	-18.10	2.42
OPER	5C1T	-23.11	3.04	-17.77	2.34	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.72	HS 44.20	79.6
5C1T	4.69	40.92	0.00	375.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -17.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.5	160.2	-175.1	160.2	-175.1	178.8	-156.5	178.8	-
OPER 260.8	279.4	-279.4	279.4	-279.4	298.0	-260.8	298.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19	
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00	
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.57	2.86	7.57	2.86	HS 57.19	102.9
5C1T	11.02	5.79	11.02	5.79	0.00	463.5

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	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. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.840

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15		110.02	
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	13.24	1.44	12.00	1.65	52.0
5C1T	28.17	3.83	25.53	4.37	306.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.81	-22.63	26.01	-23.54	26.09	-18.10	20.07
OPER	5C1T	-23.11	26.30	-17.77	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
5C1T	4.08	4.04	0.00	323.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
5C1T	26.42	4.01	26.42	4.01	0.00	320.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.1	185.2	-156.3
OPER	300.6C	-268.7	268.7	-300.6C	340.7	-228.6	308.7	-260.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02		
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	13.24	1.44	12.00	1.65	HS 28.88
5C1T	28.17	3.83	25.53	4.37	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.81	-26.00	26.01	-26.06	26.09	-20.04	20.07
OPER	5C1T	-26.09	26.30	-20.07	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.73	67.9
5C1T	4.08	4.04	0.00	323.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.000Dead Load Moment Superimposed Dead Load Moment
-3.0 -37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.6	151.6	-183.7	151.6	-183.7	191.7	-143.6	191.7	-
OPER 239.3	279.4	-279.4	279.4	-279.4	319.5	-239.3	319.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.42	1.51	12.42	1.51	HS 30.23	54.4
5C1T	26.42	4.01	26.42	4.01	0.00	320.9

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 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. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.100

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-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	191.4	-150.2	172.2	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	319.0	-250.3	287.0	-282.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98			
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54		
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00			
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.95	2.75	7.15	3.10	HS 54.95	98.9
5C1T	11.56	5.66	10.40	6.38	0.00	452.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.100

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.86	29.44	-2.20	22.64	-3.15	23.57	-2.42	18.13
OPER	5C1T	-3.07	23.31	-2.36	17.93	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.73	2.21	HS 44.14	79.4
5C1T	40.50	4.64	0.00	371.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.100

Dead Load Moment Superimposed Dead Load Moment
-1.4 -16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.6	160.3	-175.0	160.3	-175.0	178.6	-156.6	178.6	-
OPER 261.1	279.4	-279.4	279.4	-279.4	297.7	-261.1	297.7	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98	
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00	
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.42	2.87	7.42	2.87	HS 57.31	103.2
5C1T	10.79	5.90	10.79	5.90	0.00	472.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.200

	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. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.200

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	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37			
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18		
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00			
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.39
5C1T	5.66	6.68	5.06	7.48	0.00 404.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.5	66.2
OPER	151.3	-122.5	110.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.86	24.79	-2.20	19.07	-4.35	20.80	-3.35	16.00
OPER	5C1T	-4.67	20.08	-3.59	15.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.90	2.67	HS 53.37	96.1
5C1T	26.25	5.49	0.00	439.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.200

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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37	
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00	
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.68	107.4
5C1T	5.26	6.95	5.26	6.95	0.00	420.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.300

	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. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.300

Dead Load Moment Superimposed Dead Load Moment
0.8 10.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.8	154.6	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.6	257.7	-311.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76			
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00		
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00			
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	4.84	1.90	5.39	HS 37.99	68.4
5C1T	4.01	7.48	3.57	8.34	0.00	285.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.5	112.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.94	20.31	-3.80	15.62	-6.61	17.90	-5.08	13.77
OPER	5C1T	-6.57	16.79	-5.06	12.92	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.94	3.32	HS 66.32	119.4
5C1T	18.33	6.68	0.00	534.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76	
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00	
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	5.02	1.98	5.02	HS 39.57	71.2
5C1T	3.72	7.77	3.72	7.77	0.00	297.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.400

	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. S01
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.88	28.67	28.67	1.699
			999999.000
			101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

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	169.3	-172.3	150.1	-191.5
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15			
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00		
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00			
		-35.16 L	-27.04	13.41	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.86	6.24	1.65	6.94	HS 33.00	59.4
5C1T	3.36	8.17	2.98	9.08	0.00	238.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S01
 Check Point I. D. 6.400
 HS20 5C1T

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.1	68.5
OPER	151.3	-118.5	114.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.37	16.92	-7.21	13.02	-9.16	14.95	-7.05	11.50
OPER	5C1T	-8.74	13.83	-6.72	10.64	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.59	4.05	HS 81.00	145.8	
5C1T	13.56	8.26	0.00	660.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 17.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.2	175.0	-160.2	156.6	-178.7	156.6	-
OPER 297.9	279.4	-279.4	279.4	-279.4	260.9	-297.9	260.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15	
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00	
		-35.16 L	-27.04	13.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.72	6.47	1.72	6.47	HS 34.42	62.0
5C1T	3.11	8.47	3.11	8.47	0.00	248.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.500

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.88	28.67	28.67	1.699	999999.000	101.699

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

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	167.6	-174.0	148.4	-193.2
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54			
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07	0.00		
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00			
		-34.26 L	-26.35	13.41	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.91	8.23	1.69	9.14	HS 33.77	60.8
5C1T	3.16	8.46	2.80	9.40	0.00	224.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.500

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	-13.39	13.39	-10.30	10.30	-11.93	12.04	-9.18	9.26
OPER	5C1T	-11.10	11.30	-8.54	8.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.20	HS 104.11	187.4
5C1T	10.50	10.28	0.00	822.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54	
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07	0.00
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00	
		-34.26 L	-26.35	13.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.76	8.54	1.76	8.54	HS 35.24	63.4
5C1T	2.92	8.78	2.92	8.78	0.00	233.8

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 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. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.600

Dead Load Moment Superimposed Dead Load Moment
1.4 17.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93			
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07		0.00	
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00	0.00			
		-34.21 L	-26.31	14.28	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.85	6.21	1.64	6.90	HS 32.86	59.1
5C1T	3.30	8.42	2.92	9.35	0.00	233.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	70.9
OPER	151.3	-114.5	118.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.93	9.38	-13.02	7.22	-14.84	9.27	-11.41	7.13
OPER	5C1T	-13.57	8.87	-10.44	6.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.56	HS 81.18	146.1	
5C1T	8.44	13.33	0.00	675.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-160.0	175.3	-160.0	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93	
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00	0.00	
		-34.21 L	-26.31	14.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.71	6.44	1.71	6.44	HS 34.28	61.7
5C1T	3.05	8.73	3.05	8.73	0.00	244.0

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 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. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.0	256.3	-313.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck 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	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33			
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00		
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00			
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.12	4.82	1.88	37.70	67.9
5C1T	3.94	7.85	3.51	0.00	280.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.700

Dead Load	Superimposed Dead Load
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	-20.31	4.96	-15.63	3.81	-17.79	6.71	-13.69	5.16
OPER	5C1T	-16.57	6.65	-12.75	5.12	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.32	10.74	HS 66.47	119.7
5C1T	6.79	18.07	0.00	543.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 11.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33	
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00	
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.96	5.00	1.96	5.00	HS 39.28	70.7
5C1T	3.65	8.15	3.65	8.15	0.00	292.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.81	28.67	28.67	1.699	999999.000	98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.800Dead Load Moment 0.0
Superimposed Dead Load Moment 0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	179.9	-161.7	160.7	-180.9
OPER	300.6C	-268.7	268.7	-300.6C	299.8	-269.5	267.8	-301.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72			
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98		
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00			
		-38.13 R	-29.33	252.07	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	3.17	3.84	2.84	56.71	102.1
5C1T	5.47	7.07	4.89	0.00	391.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.800

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.3	73.3
OPER	151.3	-110.6	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	-24.77	2.84	-19.05	2.19	-20.70	4.45	-15.92	3.42
OPER	5C1T	-19.81	4.73	-15.24	3.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.68	16.49	HS 53.57	96.4
5C1T	5.58	25.81	0.00	446.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.800Dead Load Moment 0.0
Superimposed Dead Load Moment 0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.1	-168.1	167.1	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72	
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00	
		-38.13 R	-29.33	252.07	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 58.99	106.2
5C1T	5.09	7.35	5.09	7.35	0.00	407.0

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 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. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-14.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.6	-151.9	170.4	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.1	-253.2	284.1	-285.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck 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	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00	
		-42.36 R	-32.58	167.46	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.73	2.73	6.95	3.08	HS 54.66	98.4
5C1T	10.73	5.98	9.64	6.73	0.00	478.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.900

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.1	74.5
OPER	151.3	-108.6	124.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.96	-22.63	2.28	-23.47	3.20	-18.05	2.46
OPER	5C1T	-22.99	3.18	-17.69	2.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.21	23.30	HS 44.29	79.7
5C1T	4.72	39.02	0.00	377.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 6.900

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00	
		-42.36 R	-32.58	167.46	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.22	2.85	7.22	2.85	HS 56.98	102.6
5C1T	10.01	6.23	10.01	6.23	0.00	498.5

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 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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -33.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.2	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	10.07	1.46	9.12	1.66	HS 29.25 52.6
5C1T	20.98	3.92	18.99	4.46	0.00 313.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.000

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

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.0	64.2
OPER	151.3	-106.6	107.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.97	-22.63	26.13	-23.47	25.86	-18.05	19.89
OPER	5C1T	-22.99	25.68	-17.69	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
5C1T	4.11	4.17	0.00	328.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-2.8	-33.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	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	9.44	1.53	9.44	1.53	HS 30.60	55.1
5C1T	19.66	4.10	19.66	4.10	0.00	328.0

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 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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.81	28.67	28.67	1.699
			999999.000
			98.062

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
 Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
 -2.8 -33.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.2	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	10.07	1.46	9.12	HS 29.25	52.6
5C1T	20.98	3.92	18.99	0.00	313.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.000

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

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.0	64.2
OPER	151.3	-106.6	107.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.97	-26.00	26.13	-25.99	25.86	-20.00	19.89
OPER	5C1T	-25.95	25.68	-19.96	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.89	HS 37.80	68.0
5C1T	4.11	4.17	0.00	328.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-2.8	-33.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	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	9.44	1.53	9.44	1.53	HS 30.60	55.1
5C1T	19.66	4.10	19.66	4.10	0.00	328.0

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 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. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.100

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	190.2	-151.4	171.0	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.0	-252.3	285.1	-284.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89			
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46		
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00			
		-43.80 L	-33.69	32.54	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.76	2.77	6.97	3.12	HS 55.44 99.8
5C1T	11.18	5.76	10.06	6.49	0.00 460.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.3	65.4
OPER	151.3	-123.8	109.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	29.62	-2.92	22.79	-3.74	23.37	-2.88	17.97
OPER	5C1T	-3.75	22.61	-2.88	17.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	19.58	2.21	HS 44.15	79.5
5C1T	33.02	4.82	0.00	385.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -15.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.8	161.1	-174.2	161.1	-174.2	177.5	-157.8	177.5	-
OPER 263.0	279.4	-279.4	279.4	-279.4	295.8	-263.0	295.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89	
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00	
		-43.80 L	-33.69	32.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.24	2.89	7.24	2.89	HS 57.81	104.1
5C1T	10.43	6.01	10.43	6.01	0.00	480.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.200

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.5	161.8	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.7	-267.6	269.7	-299.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28			
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93		86.10	
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00			
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.37	103.3
5C1T	5.65	6.70	5.05	7.50	0.00	404.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.200

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	24.99	-2.92	19.22	-4.48	20.63	-3.45	15.87
OPER	5C1T	-5.47	19.38	-4.20	14.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.32	2.66	HS 53.29	95.9
5C1T	22.28	5.72	0.00	458.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.200

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
INV. 167.0	167.2	-168.1	168.3	-167.0
OPER 278.3	279.4	-279.4	280.5	-278.3

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28	
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00	
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber	bottom fiber	top fiber	bottom fiber
	+bend	-bend	+bend	-bend
HS20	2.98	4.00	2.98	4.00
5C1T	5.25	6.97	5.25	6.97

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.300

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.	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	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68			
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93		0.00	
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00			
		-37.96 L	-29.20	35.72	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.79	1.91	5.35	HS 38.15	68.7
5C1T	4.08	7.33	3.63	8.17	0.00	290.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.300

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.89	20.39	-3.76	15.68	-6.71	17.75	-5.16	13.65
OPER	5C1T	-7.39	16.16	-5.68	12.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.72	3.32	HS 66.47	119.6
5C1T	16.22	6.99	0.00	559.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.300Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68	
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00	
		-37.96 L	-29.20	35.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.99	4.98	1.99	4.98	HS 39.73	71.5
5C1T	3.78	7.61	3.78	7.61	0.00	302.5

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 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. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.2	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.3	-284.0	253.3	-316.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07			
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00		
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00			
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.12	1.67	6.81	HS 33.43	60.2
5C1T	3.47	7.70	3.08	8.57	0.00	246.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.400

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.7	69.0
OPER	151.3	-117.8	114.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.38	17.02	-7.21	13.09	-9.23	14.82	-7.10	11.40
OPER	5C1T	-9.45	13.22	-7.27	10.17	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.54	4.05	HS 81.04	145.9	
5C1T	12.47	8.69	0.00	695.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.8	173.8	-161.5	173.8	-161.5	158.4	-176.8	158.4	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07	
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00	
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.35	1.74	6.35	HS 34.85	62.7
5C1T	3.21	8.00	3.21	8.00	0.00	256.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.276

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.5	-171.0	151.3	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.1	252.2	-317.1

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46			
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98		0.00	
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00			
		-37.69 R	-28.99	227.98	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	6.24	1.71	6.94	HS 34.13	61.4
5C1T	3.34	7.57	2.96	8.41	0.00	236.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.5	70.1
OPER	151.3	-115.8	116.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.48	13.52	-10.37	10.40	-11.97	11.93	-9.21	9.17
OPER	5C1T	-11.58	10.75	-8.91	8.27	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.16	5.19	HS 103.10	185.6
5C1T	10.00	10.87	0.00	800.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

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

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46	
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00	
		-37.69 R	-28.99	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.78	6.47	1.78	6.47	HS 35.58	64.0
5C1T	3.09	7.85	3.09	7.85	0.00	247.0

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 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. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.600

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85			
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00		
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00			
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.87	4.57	1.66	HS 33.16	59.7
5C1T	3.55	7.05	3.16	0.00	252.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.600

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-68.3	71.4
OPER	151.3	-113.8	118.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.12	9.55	-13.17	7.34	-14.86	9.16	-11.43	7.04
OPER	5C1T	-13.97	8.47	-10.75	6.51	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.99	7.47	HS 79.76	143.6	
5C1T	8.15	14.05	0.00	651.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.600

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.2	172.7	-162.6	172.7	-162.6	160.1	-175.2	160.1	-
OPER 292.0	279.4	-279.4	279.4	-279.4	266.8	-292.0	266.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85	
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00	
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.73	4.74	1.73	4.74	HS 34.56	62.2
5C1T	3.29	7.32	3.29	7.32	0.00	263.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.700

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment 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. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.700

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.9	-163.7	158.7	-182.9
OPER	300.6C	-268.7	268.7	-300.6C	296.5	-272.8	264.5	-304.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24			
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00		
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00	0.00			
		-42.29 R	-32.53	188.20	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.12	3.53	1.89	3.94	HS 37.88	68.2
5C1T	4.25	6.45	3.79	7.21	0.00	303.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.700

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.51	5.15	-15.77	3.96	-17.81	6.59	-13.70	5.07
OPER	5C1T	-16.67	6.39	-12.82	4.91	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.27	11.02	HS 65.44	117.8	
5C1T	6.71	18.93	0.00	536.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.700Dead Load Moment 0.3
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.1	169.3	-166.0	169.3	-166.0	165.2	-170.1	165.2	-
OPER 283.5	279.4	-279.4	279.4	-279.4	275.3	-283.5	275.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24	
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00	0.00	
		-42.29 R	-32.53	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.97	3.66	1.97	3.66	HS 39.42	71.0
5C1T	3.95	6.70	3.95	6.70	0.00	315.8

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.800

Dead Load Moment	Superimposed Dead Load Moment
-0.7	-8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.8	-155.7	166.7	-174.9
OPER	300.6C	-268.7	268.7	-300.6C	309.7	-259.5	277.8	-291.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63			
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98		86.10	
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00			
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.13	2.78	2.80	3.13	HS 55.68	100.2
5C1T	6.64	5.63	5.96	6.32	0.00	450.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.800

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.68	2.79	-18.98	2.15	-20.73	4.29	-15.95	3.30
OPER	5C1T	-20.19	4.56	-15.53	3.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.67	17.18	HS 53.41	96.1
5C1T	5.44	26.97	0.00	435.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.800

Dead Load Moment	Superimposed Dead Load Moment
-0.7	-8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.0	-171.3	164.0	-171.3	173.1	-162.2	173.1	-
162.2								
OPER	279.4	-279.4	279.4	-279.4	288.5	-270.3	288.5	-
270.3								

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63	
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00	
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	2.91	2.90	2.91	2.90	HS 57.99	104.4
5C1T	6.19	5.86	6.19	5.86	0.00	468.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.900

	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. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-2.1 -25.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.6	-144.9	177.4	-164.1
OPER	300.6C	-268.7	268.7	-300.6C	327.7	-241.6	295.7	-273.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03			
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07		
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00			
		-53.56 R	-41.20	193.77	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.37	2.14	8.45	2.42	HS 42.84
5C1T	15.29	4.51	13.80	5.11	0.00 77.1 360.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.900

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.7	74.9
OPER	151.3	-107.9	124.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.37	2.91	-22.59	2.24	-23.54	2.89	-18.11	2.22
OPER	5C1T	-23.58	3.00	-18.14	2.31	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.20	25.74	HS 44.07	79.3	
5C1T	4.57	41.62	0.00	366.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 7.900Dead Load Moment -2.1
Superimposed Dead Load Moment -25.0

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 151.4	156.8	-178.5	156.8	-178.5	183.9	-151.4	183.9	-
OPER 252.3	279.4	-279.4	279.4	-279.4	306.5	-252.3	306.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00	
		-53.56 R	-41.20	193.77	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	Rating Value	Load Capacity (tons)	
HS20	8.76	2.24	8.76	2.24	HS 44.74	80.5
5C1T	14.30	4.71	14.30	4.71	0.00	376.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			106.216

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		39.35		102.4

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	15.10	1.30	13.72	1.49	HS 26.04 46.9
5C1T	29.98	3.00	27.24	3.43	0.00 239.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.9	0.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.37	36.19	-22.59	27.84	-23.54	26.36	-18.11	20.28
OPER	5C1T	-23.58	27.13	-18.14	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.88	1.73	HS 34.61	62.3
5C1T	3.97	3.85	0.00	307.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	147.7	-187.6	147.7	-187.6	197.5	-137.8	197.5	-
137.8								
OPER	279.4	-279.4	279.4	-279.4	329.2	-229.6	329.2	-
229.6								

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber	
HS20	14.19	1.37	14.19	1.37	49.2
5C1T	28.16	3.14	28.16	3.14	251.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

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

Hybrid Section Properties:

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

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.699	999999.000	92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -46.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	210.3	-131.3	191.1	-150.5
OPER	300.6C	-268.7	268.7	-300.6C	350.4	-218.9	318.4	-250.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck 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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98		157.85	
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00			
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	15.10	1.30	13.72	1.49	26.04
5C1T	29.98	3.00	27.24	3.43	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.82	36.19	-26.01	27.84	-26.13	26.36	-20.10	20.28
OPER	5C1T	-26.68	27.13	-20.52	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.88	1.73	HS 34.61	62.3
5C1T	3.97	3.85	0.00	307.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.000

Dead Load Moment	Superimposed Dead Load Moment
-3.8	-46.0

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	14.19	1.37	14.19	1.37	HS 27.31	49.2
5C1T	28.16	3.14	28.16	3.14	0.00	251.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.100

	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
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. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.100

Dead Load Moment	Superimposed Dead Load Moment
-1.8	-21.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.4	-147.1	175.3	-166.3
OPER	300.6C	-268.7	268.7	-300.6C	324.1	-245.2	292.1	-277.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81			
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77		
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00			
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.27	2.71	8.35	3.06	HS 54.16	97.5
5C1T	13.23	5.30	11.92	5.99	0.00	423.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.100

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

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.56	32.21	-0.43	24.77	-1.24	24.21	-0.95	18.62
OPER	5C1T	-0.88	24.44	-0.67	18.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.26	1.98	HS 39.62	71.3
5C1T	144.24	4.35	0.00	348.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.8 -21.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.6	158.3	-177.0	158.3	-177.0	181.7	-153.6	181.7	-
OPER 256.0	279.4	-279.4	279.4	-279.4	302.8	-256.0	302.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81	
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00	
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.66	2.83	8.66	2.83	HS 56.54	101.8
5C1T	12.36	5.53	12.36	5.53	0.00	442.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.200

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

Non-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. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.699	999999.000	92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20			
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02		
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00			
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.27	3.85	2.93	4.31	HS 58.55	105.4
5C1T	5.71	6.63	5.11	7.43	0.00	408.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.200

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.7	65.0
OPER	151.3	-124.4	108.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.03	27.72	-0.79	21.32	-2.66	21.85	-2.05	16.81
OPER	5C1T	-2.34	21.45	-1.80	16.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	28.04	2.34	HS 46.89	84.4
5C1T	53.28	5.05	0.00	404.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20	
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00	
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	3.04	4.01	3.04	4.01	HS 60.88	109.6
5C1T	5.31	6.90	5.31	6.90	0.00	424.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.300

	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. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.3	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59			
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85	110.02		
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00			
		-35.20 L	-27.08	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.93	4.68	1.71	5.21	HS 34.24	61.6
5C1T	3.72	8.06	3.30	8.97	0.00	264.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.300

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	-122.4 110.3

Live Load Effect

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

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	22.80	-2.29	17.54	-4.42	19.32	-3.40	14.86
OPER	5C1T	-4.09	18.62	-3.15	14.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.61	2.90	HS 58.05	104.5
5C1T	29.94	5.92	0.00	473.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 14.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	264.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59	
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85	110.02
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00	
		-35.20 L	-27.08	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.78	4.86	1.78	4.86	HS 35.69	64.2
5C1T	3.44	8.37	3.44	8.37	0.00	275.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.699
			999999.000
			92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.400

Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	164.1	-177.5	144.9	-196.7
OPER	300.6C	-268.7	268.7	-300.6C	273.4	-295.9	241.4	-327.9

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98			
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85		0.00	
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00			
		-30.17 L	-23.21	58.85	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	1.59	5.69	1.40	28.03	50.5
5C1T	2.86	9.81	2.53	0.00	202.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.3	-120.5	112.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.62	18.34	-5.09	14.11	-6.50	16.67	-5.00	12.83
OPER	5C1T	-6.09	15.87	-4.68	12.21	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.91	3.67	HS 73.45	132.2
5C1T	19.80	7.07	0.00	565.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.400

Dead Load Moment 2.0
Superimposed Dead Load Moment 25.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.0	178.5	-156.8	178.5	-156.8	151.3	-184.0	151.3	-
OPER 306.6	279.4	-279.4	279.4	-279.4	252.2	-306.6	252.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98	
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00	
		-30.17 L	-23.21	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.46	5.90	1.46	5.90	HS 29.28	52.7
5C1T	2.64	10.16	2.64	10.16	0.00	211.1

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 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. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.71	28.67	28.67	1.699	999999.000	92.374

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		9.55		107.5

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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.500

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.1

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38			
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85		0.00	
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00			
		-25.14 L	-19.34	58.85	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	1.40	7.01	1.24	7.74	44.5
5C1T	2.56	12.06	2.25	13.34	180.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.500

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.50	15.37	-7.31	11.82	-8.87	13.95	-6.82	10.73
OPER	5C1T	-8.43	13.29	-6.49	10.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.48	4.46	HS 89.21	160.6
5C1T	14.05	8.60	0.00	687.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.500

Dead Load Moment	Superimposed Dead Load Moment
2.6	32.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.4	181.5	-153.8	181.5	-153.8	146.9	-188.4	146.9	-
OPER 314.0	279.4	-279.4	279.4	-279.4	244.8	-314.0	244.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38	
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00	
		-25.14 L	-19.34	58.85	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	1.29	7.25	1.29	7.25	HS 25.86	46.5
5C1T	2.36	12.49	2.36	12.49	0.00	188.5

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 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. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.600

Dead Load Moment 2.8
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	158.1	-183.5	138.9	-202.7
OPER	300.6C	-268.7	268.7	-300.6C	263.5	-305.8	231.5	-337.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77			
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85		0.00	
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00			
		-20.11 L	-15.47	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.34	8.83	1.18	9.75	HS 23.58	42.4
5C1T	2.49	15.20	2.19	16.80	0.00	174.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.600

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-12.31	11.85	-9.47	9.12	-11.52	11.20	-8.86	8.62
OPER	5C1T	-11.06	10.81	-8.51	8.31	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.67	5.89	HS 113.48	204.3
5C1T	10.53	10.76	0.00	842.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.600

Dead Load Moment Superimposed Dead Load Moment
2.8 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 189.9	182.5	-152.8	182.5	-152.8	145.3	-189.9	145.3	-
OPER 316.6	279.4	-279.4	279.4	-279.4	242.2	-316.6	242.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77	
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00	
		-20.11 L	-15.47	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.23	9.14	1.23	9.14	HS 24.68	44.4
5C1T	2.29	15.74	2.29	15.74	0.00	183.0

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	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.700

Dead Load Moment 2.6
Superimposed Dead Load Moment 32.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	159.4	-182.2	140.2	-201.4
OPER	300.6C	-268.7	268.7	-300.6C	265.7	-303.6	233.7	-335.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16			
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85		0.00	
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00			
		-15.09 L	-11.60	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.35	11.69	1.19	12.92	HS 23.79	42.8
5C1T	2.64	20.13	2.32	22.25	0.00	185.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.700

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	-114.5	118.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.43	8.87	-12.64	6.82	-14.43	8.45	-11.10	6.50
OPER	5C1T	-14.03	8.18	-10.79	6.30	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.18	8.00	HS 83.60	150.5	
5C1T	8.16	14.45	0.00	652.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.700Dead Load Moment 2.6
Superimposed Dead Load Moment 32.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.6	181.6	-153.6	181.6	-153.6	146.7	-188.6	146.7	-
OPER 314.4	279.4	-279.4	279.4	-279.4	244.4	-314.4	244.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16	
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00	
		-15.09 L	-11.60	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.24	12.10	1.24	12.10	HS 24.88	44.8
5C1T	2.43	20.84	2.43	20.84	0.00	194.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.800

	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. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.800

Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	163.6	-178.0	144.4	-197.2
OPER	300.6C	-268.7	268.7	-300.6C	272.6	-296.7	240.6	-328.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55			
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85		0.00	
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00			
		-10.06 L	-7.74	58.85	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	1.63	17.13	1.44	HS 28.74	51.7
5C1T	3.25	29.50	2.87	0.00	229.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.800

Dead Load	Superimposed Dead Load
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	-112.5	120.3

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.00	5.98	-16.15	4.60	-17.56	5.74	-13.51	4.42
OPER	5C1T	-17.54	5.41	-13.49	4.16	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.21	12.07	HS 64.28	115.7	
5C1T	6.41	22.22	0.00	513.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.800Dead Load Moment 2.1
Superimposed Dead Load Moment 26.0

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 184.5	178.9	-156.4	178.9	-156.4	150.8	-184.5	150.8	-
OPER 307.5	279.4	-279.4	279.4	-279.4	251.3	-307.5	251.3	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55	
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00	
		-10.06 L	-7.74	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.50	17.75	1.50	17.75	HS 30.03	54.0
5C1T	3.00	30.57	3.00	30.57	0.00	239.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
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. S01
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.900

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.5	-171.0	151.4	-190.2
OPER	300.6C	-268.7	268.7	-300.6C	284.2	-285.0	252.3	-317.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94			
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00		
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00			
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.75	32.92	2.44	36.61	HS 48.78	87.8
5C1T	5.59	56.69	4.97	63.05	0.00	397.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.3	73.3
OPER	151.3	-110.5	122.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.95	3.01	-19.96	2.31	-20.89	3.12	-16.07	2.40
OPER	5C1T	-21.24	3.55	-16.34	2.73	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.56	23.53	HS 51.11	92.0
5C1T	5.20	34.42	0.00	416.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 8.900

Dead Load Moment 1.2
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber +bend	top fiber -bend	bottom fi +bend	bottom fi -bend
INV. 177.5	174.2	-161.1	174.2	-161.1	157.8	-177.5	157.8	-
OPER 295.8	279.4	-279.4	279.4	-279.4	263.0	-295.8	263.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Live Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Loc. of Conc. Load 2
INV.	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94	
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00	
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	2.54	34.16	2.54	34.16	HS 50.86	91.5
5C1T	5.18	58.82	5.18	58.82	0.00	414.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
 Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	5C1T	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.	top fiber +bend	Rating bottom 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
5C1T	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

HS20 5C1T

Member I. D. S01
Check Point I. D. 9.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.1	70.2
OPER	151.3	-108.5	117.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.19	0.00	-24.00	0.00	-24.40	2.12	-18.77	1.63
OPER	5C1T	-25.07	0.00	-19.28	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.09	33.07	HS 41.75	75.1
5C1T	4.33	999.00	0.00	346.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S01
Check Point I. D. 9.000Dead 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
INV. 167.6	167.6	-167.6	167.6	-167.6
OPER 279.4	279.4	-279.4	279.4	-279.4

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/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 R	0.00	0.00	0.0	0.00	0.00
OPER	5C1T	0.00 R	0.00	0.00	0.0	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)
	top fiber	bottom fiber	+bend	-bend	
HS20	999.00	999.00	999.00	999.00	999.0
5C1T	999.00	999.00	999.00	999.00	999.0

BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 8

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D. S02 Symmetry:

Span Length:	Span 1 23.917	Span 2 23.917	Span 3 23.917	Span 4 23.917	Span 5 23.917
	Span 6 23.917	Span 7 23.917	Span 8 23.917	Span 9 0.000	Span 10 0.000

Range Length -- Non-Composite:							
Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	1	0		0.0	0.0

Superimposed Dead Load:						
Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	615.0	615.0	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	23.917	0.0
8	P	11.958	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 1.000

Dead Load Moment Superimposed Dead Load 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	0.00 R	0.00	0.00	0.00	0.0	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	0.00

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
5C1T	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

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.3	-122.8	109.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.08	31.19	-1.60	24.00	-2.12	24.40	-1.63	18.77
OPER	5C1T	-2.10	25.07	-1.62	19.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	34.73	2.11	HS 42.29	76.1
5C1T	58.42	4.39	0.00	350.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.000Dead 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	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	5C1T	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

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1T	999.00	999.00	999.00	999.00	0.00	999.0

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.100

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39			
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00		
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00			
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.78	32.58	2.47	36.27	HS 49.34	88.8
5C1T	5.65	56.11	5.02	62.47	0.00	401.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.7	66.9
OPER	151.3	-121.2	111.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.01	25.95	-2.31	19.96	-3.12	20.89	-2.40	16.07
OPER	5C1T	-3.55	21.24	-2.73	16.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.33	2.58	HS 51.59	92.9
5C1T	34.13	5.25	0.00	420.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.100

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.2	173.0	-162.2	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39	
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00	
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.57	33.82	2.57	33.82	HS 51.42	92.6
5C1T	5.23	58.24	5.23	58.24	0.00	418.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.200

Dead Load Moment 2.1
Superimposed Dead Load Moment 21.0

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	166.5	-175.0	147.3	-194.2
OPER	300.6C	-268.7	268.7	-300.6C	277.5	-291.7	245.6	-323.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78			
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00		
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00			
		-10.06 R	-7.74	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.66	16.84	1.47	18.69	HS 29.34	52.8
5C1T	3.31	29.01	2.93	32.19	0.00	234.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 2.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.6	113.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.98	21.00	-4.60	16.15	-5.74	17.56	-4.42	13.51
OPER	5C1T	-5.41	17.54	-4.16	13.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.00	3.23	HS 64.66	116.4
5C1T	22.09	6.45	0.00	516.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.200

Dead Load Moment Superimposed Dead Load Moment
2.1 21.0

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV. 181.5	176.9	-158.4	176.9	-158.4	153.8	-181.5	153.8	-
OPER 302.5	279.4	-279.4	279.4	-279.4	256.3	-302.5	256.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78	
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00	
		-10.06 R	-7.74	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.53	17.47	1.53	17.47	HS 30.62	55.1
5C1T	3.06	30.08	3.06	30.08	0.00	244.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.300

Dead Load Moment Superimposed Dead Load Moment
2.6 26.2

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	163.1	-178.5	143.9	-197.7
OPER	300.6C	-268.7	268.7	-300.6C	271.8	-297.5	239.8	-329.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18			
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00		
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00			
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.38	11.45	1.22	HS 24.41	43.9
5C1T	2.70	19.72	2.38	0.00	190.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.300Dead 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 -118.0 114.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.87	16.43	-6.82	12.64	-8.45	14.43	-6.50	11.10
OPER	5C1T	-8.18	14.03	-6.30	10.79	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.98	4.19	HS 83.83	150.9
5C1T	14.41	8.18	0.00	654.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.300

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.9	179.2	-156.1	179.2	-156.1	150.3	-184.9	150.3	-
OPER 308.2	279.4	-279.4	279.4	-279.4	250.6	-308.2	250.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18	
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00	
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.27	11.86	1.27	11.86	HS 25.51	45.9
5C1T	2.49	20.43	2.49	20.43	0.00	199.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

	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. S02
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.400

Dead Load Moment 2.8
Superimposed Dead Load Moment 27.9

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	162.0	-179.6	142.8	-198.8
OPER	300.6C	-268.7	268.7	-300.6C	270.0	-299.3	238.0	-331.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57			
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00		
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00			
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.38	8.64	1.21	9.56	HS 24.24	43.6
5C1T	2.55	14.88	2.25	16.47	0.00	179.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.1	0.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-69.8 69.8
OPER	151.3	-116.3 116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-11.85	12.31	-9.12	9.47	-11.20	11.52	-8.62	8.86
OPER	5C1T	-11.06	10.81	-8.51	8.32	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.89	5.67	HS 113.45	204.2
5C1T	10.52	10.77	0.00	841.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.400Dead Load Moment 2.8
Superimposed Dead Load Moment 27.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 186.1	179.9	-155.4	179.9	-155.4	149.2	-186.1	149.2	-
OPER 310.1	279.4	-279.4	279.4	-279.4	248.7	-310.1	248.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57	
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00	
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.27	8.95	1.27	8.95	HS 25.34	45.6
5C1T	2.35	15.42	2.35	15.42	0.00	187.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.500

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.1

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	163.2	-178.4	144.0	-197.6
OPER	300.6C	-268.7	268.7	-300.6C	272.0	-297.3	240.0	-329.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96			
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00		
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00	0.00	0.00			
		-25.14 R	-19.34	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.44	6.87	1.27	7.61	HS 25.35	45.6
5C1T	2.62	11.83	2.31	13.10	0.00	184.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.5	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.37	9.50	-11.82	7.31	-13.95	8.87	-10.73	6.82
OPER	5C1T	-13.29	8.43	-10.23	6.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.48	7.45	HS 89.59	161.3
5C1T	8.63	14.00	0.00	690.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.500

Dead Load Moment Superimposed Dead Load Moment
2.6 26.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.8	179.1	-156.2	179.1	-156.2	150.4	-184.8	150.4	-
OPER 308.1	279.4	-279.4	279.4	-279.4	250.7	-308.1	250.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96	
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00	0.00	0.00	
		-25.14 R	-19.34	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.32	7.11	1.32	7.11	HS 26.49	47.7
5C1T	2.41	12.25	2.41	12.25	0.00	193.1

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.67	28.67	28.67	1.699	999999.000	90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.600

Dead Load Moment 2.0
Superimposed Dead Load Moment 20.5

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	166.9	-174.7	147.7	-193.9
OPER	300.6C	-268.7	268.7	-300.6C	278.2	-291.1	246.2	-323.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35			
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00		
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00			
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.62	5.60	1.43	6.22	HS 28.58	51.4
5C1T	2.91	9.65	2.58	10.71	0.00	206.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.600

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	-18.34	6.62	-14.11	5.09	-16.67	6.50	-12.83	5.00
OPER	5C1T	-15.87	6.09	-12.21	4.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.69	10.85	HS 73.90	133.0	
5C1T	7.12	19.68	0.00	569.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.600

Dead Load Moment 2.0
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.1	176.6	-158.7	176.6	-158.7	154.2	-181.1	154.2	-
OPER 301.9	279.4	-279.4	279.4	-279.4	256.9	-301.9	256.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35	
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00	
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.49	5.81	1.49	5.81	HS 29.83	53.7
5C1T	2.69	10.01	2.69	10.01	0.00	215.0

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	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. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.700

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.1	256.3	-313.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74			
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32		
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00			
		-35.20 R	-27.08	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.95	4.64	1.73	5.16	HS 34.60	62.3
5C1T	3.75	7.99	3.33	8.89	0.00	266.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.700

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	-111.3	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.80	2.98	-17.54	2.29	-19.32	4.42	-14.86	3.40
OPER	5C1T	-18.62	4.09	-14.33	3.15	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.93	16.47	HS 58.60	105.5	
5C1T	5.98	29.68	0.00	478.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.700Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74	
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00	
		-35.20 R	-27.08	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.80	4.81	1.80	4.81	HS 36.05	64.9
5C1T	3.47	8.29	3.47	8.29	0.00	277.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.800

	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
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. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.67	28.67	28.67	1.699	999999.000	90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.800

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.4

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	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13			
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32		
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00			
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.27	3.86	2.92	4.32	HS 58.49	105.3
5C1T	5.70	6.64	5.10	7.43	0.00	408.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.8
OPER	151.3	-109.7	123.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-27.72	1.03	-21.32	0.79	-21.85	2.66	-16.81	2.05
OPER	5C1T	-21.45	2.34	-16.50	1.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.38	27.73	HS 47.50	85.5
5C1T	5.12	52.67	0.00	409.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.800

Dead Load Moment Superimposed Dead Load Moment

-0.2 -1.4

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00	
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	3.04	4.01	3.04	4.01	HS 60.82	109.5
5C1T	5.30	6.91	5.30	6.91	0.00	424.3

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.67	28.67	28.67	1.699	999999.000	90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.900

Dead Load Superimposed Dead Load
Moment Moment
-1.8 -17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53			
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48		9.57	
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00			
		-46.28 L	-35.60	-13.52	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.33	2.75	8.39	3.11	HS 55.08 99.1
5C1T	13.06	5.39	11.76	6.08	0.00 430.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.8	-7.5
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-32.21	0.56	-24.77	0.43	-24.21	1.24	-18.62	0.95
OPER	5C1T	-24.44	0.88	-18.80	0.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.01	60.41	HS 40.28	72.5
5C1T	4.42	142.22	0.00	353.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 1.900

Dead Load Moment	Superimposed Dead Load Moment
-1.8	-17.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53	
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00	
		-46.28 L	-35.60	-13.52	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	8.71	2.87	8.71	2.87	HS 57.46	103.4
5C1T	12.19	5.62	12.19	5.62	0.00	449.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.67	28.67	28.67	1.699	999999.000	90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40			
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35		33.48	
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00			
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.35	13.35	1.54	HS 27.07	48.7
5C1T	29.23	3.12	26.49	3.55	0.00	249.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	-0.9	-7.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.9	64.6
OPER	151.3	-106.5	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.21	33.50	-24.77	25.77	-24.21	26.13	-18.62	20.10
OPER	5C1T	-24.44	26.51	-18.80	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.77	1.93	HS 35.31	63.6
5C1T	3.92	4.07	0.00	314.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	13.81	1.42	13.81	1.42	HS 28.34	51.0
5C1T	27.41	3.26	27.41	3.26	0.00	261.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.240

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 2.000

Dead Load Superimposed Dead Load
 Moment Moment
 -3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.35	13.35	1.54	HS 27.07 48.7
5C1T	29.23	3.12	26.49	3.55	0.00 249.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	0.8	-9.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.9	64.6
OPER	151.3	-106.5	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.19	33.50	-27.84	25.77	-26.36	26.13	-20.28	20.10
OPER	5C1T	-27.13	26.51	-20.87	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.77	1.93	HS 35.31	63.6
5C1T	3.92	4.07	0.00	314.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	13.81	1.42	13.81	1.42	HS 28.34	51.0
5C1T	27.41	3.26	27.41	3.26	0.00	261.0

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 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. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.100

Dead Load Moment	Superimposed Dead Load Moment
-2.1	-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	193.8	-147.8	174.6	-167.0
OPER	300.6C	-268.7	268.7	-300.6C	323.0	-246.3	291.0	-278.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31			
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35		38.27	
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00			
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.06	2.18	8.16	2.47	HS 43.67	78.6
5C1T	15.07	4.60	13.58	5.20	0.00	367.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.4	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.79	29.37	-2.15	22.59	-2.89	23.54	-2.22	18.11
OPER	5C1T	-3.00	23.58	-2.31	18.14	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.64	2.23	HS 44.68	80.4
5C1T	41.12	4.64	0.00	371.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.100Dead Load Moment Superimposed Dead Load Moment
-2.1 -20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.2	158.7	-176.6	158.7	-176.6	181.1	-154.2	181.1	-
OPER 257.0	279.4	-279.4	279.4	-279.4	301.8	-257.0	301.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31	
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00	
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.46	2.28	8.46	2.28	HS 45.58	82.0
5C1T	14.08	4.80	14.08	4.80	0.00	383.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.200

	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. S02
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-0.7 -6.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	184.9	-156.7	165.7	-175.8
OPER	300.6C	-268.7	268.7	-300.6C	308.2	-261.1	276.2	-293.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70			
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27		
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00			
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.11	2.80	2.79	3.14	HS 55.75	100.4
5C1T	6.61	5.66	5.92	6.36	0.00	453.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.5	0.0 4.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.1	66.6
OPER	151.3	-121.8	111.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.79	24.68	-2.15	18.98	-4.29	20.73	-3.30	15.95
OPER	5C1T	-4.56	20.19	-3.50	15.53	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.02	2.70	HS 53.96	97.1
5C1T	26.72	5.50	0.00	439.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.200

Dead Load Moment	Superimposed Dead Load Moment
-0.7	-6.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.6	-170.7	164.6	-170.7	172.2	-163.1	172.2	-
163.1								
OPER	279.4	-279.4	279.4	-279.4	287.0	-271.8	287.0	-
271.8								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70	
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00	
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	2.90	2.92	2.90	2.92	HS 57.92	104.3
5C1T	6.15	5.89	6.15	5.89	0.00	471.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.300

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	178.4	-163.2	159.2	-182.4
OPER	300.6C	-268.7	268.7	-300.6C	297.3	-272.0	265.3	-304.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09			
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35	0.00		
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00	0.00			
		-42.29 L	-32.53	3.13	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	3.52	1.90	3.93	HS 37.99	68.4
5C1T	4.26	6.43	3.80	7.19	0.00	304.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.1	67.6
OPER	151.3	-120.1	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.15	20.51	-3.96	15.77	-6.59	17.81	-5.07	13.70
OPER	5C1T	-6.39	16.67	-4.91	12.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	10.94	3.30	HS 65.90	118.6	
5C1T	18.81	6.76	0.00	540.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.300Dead Load Moment 0.3
Superimposed Dead Load Moment 3.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 169.7	169.0	-166.3	169.0	-166.3	165.6	-169.7	165.6	-
OPER 282.8	279.4	-279.4	279.4	-279.4	276.0	-282.8	276.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	83.79 R	64.45	59.09	0.0	60.87	46.83
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00
		-42.29 L	-32.53	3.13	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.98	3.65	1.98	3.65
5C1T	3.96	6.69	3.96	6.69

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.400

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

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	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48			
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35		0.00	
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00			
		-39.88 L	-30.68	-36.65	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	4.53	1.67	5.05	HS 33.45	60.2
5C1T	3.58	7.00	3.18	7.80	0.00	254.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.5
OPER	151.3	-118.5	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.55	17.12	-7.34	13.17	-9.16	14.86	-7.04	11.43
OPER	5C1T	-8.47	13.97	-6.51	10.75	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.45	4.00	HS 80.05	144.1	
5C1T	14.00	8.18	0.00	654.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.400Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48	
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00	
		-39.88 L	-30.68	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	4.71	1.74	4.71	HS 34.84	62.7
5C1T	3.32	7.27	3.32	7.27	0.00	265.2

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 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. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.2	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	287.0	-282.3	255.0	-314.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88			
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35		0.00	
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00			
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.94	6.18	1.73	6.88	HS 34.50	62.1
5C1T	3.37	7.49	2.99	8.34	0.00	239.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-13.52	13.48	-10.40	10.37	-11.93	11.97	-9.17	9.21
OPER	5C1T	-10.75	11.58	-8.27	8.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.19	5.16	HS 103.10	185.6
5C1T	10.87	10.00	0.00	800.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.500Dead Load Moment 1.2
Superimposed Dead Load Moment 12.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.8	173.1	-162.2	173.1	-162.2	159.5	-175.8	159.5	-
OPER 293.0	279.4	-279.4	279.4	-279.4	265.8	-293.0	265.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88	
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00	
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.80	6.41	1.80	6.41	HS 35.96	64.7
5C1T	3.12	7.78	3.12	7.78	0.00	249.6

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 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. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 2.600

Dead Load Moment 1.1
 Superimposed Dead Load Moment 11.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27			
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00		
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00			
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.90	6.06	1.69	6.75	HS 33.78	60.8
5C1T	3.50	7.63	3.11	8.50	0.00	249.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.1	70.6
OPER	151.3	-115.1	117.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.02	9.38	-13.09	7.21	-14.82	9.23	-11.40	7.10
OPER	5C1T	-13.22	9.45	-10.17	7.27	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.52	HS 81.20	146.2	
5C1T	8.71	12.44	0.00	696.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.600Dead Load Moment 1.1
Superimposed Dead Load Moment 11.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.2	172.7	-162.6	172.7	-162.6	160.0	-175.2	160.0	-
OPER 292.1	279.4	-279.4	279.4	-279.4	266.7	-292.1	266.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27	
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00	
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.76	6.29	1.76	6.29	HS 35.20	63.4
5C1T	3.24	7.93	3.24	7.93	0.00	259.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.1

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	175.7	-165.9	156.5	-185.1
OPER	300.6C	-268.7	268.7	-300.6C	292.8	-276.4	260.9	-308.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66			
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00		
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00			
		-37.96 R	-29.20	155.62	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	2.15	4.76	1.92	5.32	HS 38.40	69.1
5C1T	4.10	7.28	3.65	8.12	0.00	292.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-2.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.1	71.5
OPER	151.3	-113.5	119.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.39	4.89	-15.68	3.76	-17.75	6.71	-13.65	5.16
OPER	5C1T	-16.16	7.39	-12.43	5.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.34	10.67	HS 66.82	120.3	
5C1T	7.02	16.14	0.00	561.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 7.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.3	170.8	-164.5	170.8	-164.5	163.0	-172.3	163.0	-
OPER 287.2	279.4	-279.4	279.4	-279.4	271.6	-287.2	271.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66	
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00	
		-37.96 R	-29.20	155.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.95	2.00	4.95	HS 39.98	72.0
5C1T	3.81	7.57	3.81	7.57	0.00	304.4

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 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. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05			
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23		
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00			
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.85	2.87	4.30	HS 57.34
5C1T	5.65	6.70	5.05	7.50	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.1	0.0

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8		-67.1 72.5
OPER	151.3		-111.9 120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.99	3.79	-19.22	2.92	-20.63	4.48	-15.87	3.45
OPER	5C1T	-19.38	5.47	-14.91	4.20	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating	Factor	Rating	Load	
	(-)	(+)	Value	Capacity	
				(tons)	
HS20	2.69	16.19	HS 53.75	96.7	
5C1T	5.77	22.10	0.00	461.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05	
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00	
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
5C1T	5.25	6.97	5.25	6.97	0.00	420.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.900

	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 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. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -12.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.5	-153.1	169.3	-172.2
OPER	300.6C	-268.7	268.7	-300.6C	314.2	-255.1	282.2	-287.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44			
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40		35.88	
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00			
		-43.80 R	-33.69	158.79	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.81	2.80	7.02	3.15	HS 56.07
5C1T	11.08	5.82	9.95	6.55	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.5
OPER	151.3	-110.3	122.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.62	3.97	-22.79	3.06	-23.37	3.74	-17.97	2.88
OPER	5C1T	-22.61	3.75	-17.39	2.88	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.23	18.49	HS 44.68	80.4
5C1T	4.88	32.68	0.00	390.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-12.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.5	162.2	-173.1	162.2	-173.1	175.8	-159.5	175.8	-
OPER 265.8	279.4	-279.4	279.4	-279.4	293.0	-265.8	293.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44	
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00	
		-43.80 R	-33.69	158.79	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	7.28	2.92	7.28	2.92	HS 58.43	105.2
5C1T	10.33	6.07	10.33	6.07	0.00	485.6

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000

Dead Load Superimposed Dead Load
Moment Moment
-2.8 -27.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.08	L	15.45	-8.87	0.0	17.83	13.72	14.35		
		-95.40	L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40	
OPER	5C1T	16.07	L	12.36	-122.04	0.0	0.00	0.00	0.00		
		-59.27	L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.88	1.50	8.93	1.70	HS 30.01	54.0
5C1T	20.58	4.03	18.59	4.57	0.00	322.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.2	65.0
OPER	151.3	-108.7	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	-29.62	33.80	-22.79	26.00	-23.37	25.99	-17.97	20.00
OPER	5C1T	-22.61	25.95	-17.39	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.39	69.1
5C1T	4.23	4.18	0.00	334.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.25	1.57	9.25	1.57	HS 31.37	56.5
5C1T	19.26	4.21	19.26	4.21	0.00	336.5

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 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. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000

Dead Load Superimposed Dead Load
Moment Moment
-2.8 -27.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08	L	15.45	-8.87	0.0	17.83	13.72	14.35		
		-95.40	L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40	
OPER	5C1T	16.07	L	12.36	-122.04	0.0	0.00	0.00	0.00		
		-59.27	L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.88	1.50	8.93	1.70	HS 30.01	54.0
5C1T	20.58	4.03	18.59	4.57	0.00	322.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.0	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.2	65.0
OPER	151.3	-108.7	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	-33.97	33.80	-26.13	26.00	-25.86	25.99	-19.89	20.00
OPER	5C1T	-25.68	25.95	-19.76	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.39	69.1
5C1T	4.23	4.18	0.00	334.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.000Dead Load Moment -2.8
Superimposed Dead Load Moment -27.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.25	1.57	9.25	1.57	HS 31.37	56.5
5C1T	19.26	4.21	19.26	4.21	0.00	336.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.100

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -11.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.0	-153.5	168.8	-172.7
OPER	300.6C	-268.7	268.7	-300.6C	313.4	-255.9	281.4	-287.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23			
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27		59.79	
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00			
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.55	2.76	6.78	3.11	55.23
5C1T	10.64	6.04	9.55	6.80	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.100

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	-73.7	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	-2.84	29.42	-2.19	22.63	-3.20	23.47	-2.46	18.05
OPER	5C1T	-3.18	22.99	-2.45	17.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.05	2.24	HS 44.85	80.7
5C1T	38.59	4.78	0.00	382.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -11.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 160.0	162.5	-172.7	162.5	-172.7	175.3	-160.0	175.3	-
OPER 266.6	279.4	-279.4	279.4	-279.4	292.2	-266.6	292.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23	
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27	59.79
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00	
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.04	2.88	7.04	2.88	HS 57.55	103.6
5C1T	9.92	6.30	9.92	6.30	0.00	503.6

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 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. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 3.200

Dead Load Moment 0.0
 Superimposed Dead Load Moment 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	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	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62			
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36		
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00			
		-38.13 L	-29.33	-60.73	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.18	3.83	2.84	4.29	HS 56.75	102.2
5C1T	5.48	7.06	4.89	7.90	0.00	391.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.4	0.0 4.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.7	66.9
OPER	151.3	-121.2	111.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.84	24.77	-2.19	19.05	-4.45	20.70	-3.42	15.92
OPER	5C1T	-4.73	19.81	-3.64	15.24	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.35	2.70	HS 54.06	97.3
5C1T	25.59	5.63	0.00	450.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.200

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.2	-168.0	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62	
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00	
		-38.13 L	-29.33	-60.73	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	2.95	3.99	2.95	3.99
5C1T	5.09	7.34	5.09	7.34

HS 59.03 106.3
0.00 407.2

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
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. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.300

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01			
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27		0.00	
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00			
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.78	1.90	5.33	HS 38.02	68.4
5C1T	3.97	7.78	3.54	8.68	0.00	282.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	2.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.6	113.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.96	20.31	-3.81	15.63	-6.71	17.79	-5.16	13.69
OPER	5C1T	-6.65	16.57	-5.12	12.75	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.69	3.34	HS 66.86	120.4
5C1T	17.97	6.83	0.00	546.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.300Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00	
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	4.97	1.98	4.97	HS 39.60	71.3
5C1T	3.68	8.09	3.68	8.09	0.00	294.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400

	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. S02
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.7	151.7	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.8	-284.5	252.8	-316.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40			
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27		0.00	
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00			
		-34.21 L	-26.32	27.93	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	1.88	6.13	1.66	HS 33.30	59.9
5C1T	3.34	8.32	2.96	0.00	237.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.4

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	-9.38	16.93	-7.22	13.02	-9.27	14.84	-7.13	11.41
OPER	5C1T	-8.87	13.57	-6.82	10.44	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.54	4.07	HS 81.39	146.5
5C1T	13.30	8.46	0.00	676.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.400Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40	
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00	
		-34.21 L	-26.32	27.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.37	1.74	6.37	HS 34.72	62.5
5C1T	3.09	8.63	3.09	8.63	0.00	247.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.500

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.8	-171.8	150.6	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	283.0	-286.3	251.0	-318.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79			
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00		
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	0.00	0.00			
		-34.26 R	-26.35	177.93	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.93	8.13	1.71	9.04	HS 34.27	61.7
5C1T	3.20	8.36	2.84	9.29	0.00	227.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.1	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-13.39	13.39	-10.30	10.30	-12.04	11.93	-9.26	9.18
OPER	5C1T	-11.30	11.10	-8.69	8.54	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.21	5.22	HS 104.22	187.6
5C1T	10.29	10.49	0.00	823.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.500

Dead Load Moment Superimposed Dead Load Moment
1.6 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.0	-178.2	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79	
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	0.00	0.00	
		-34.26 R	-26.35	177.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	8.44	1.79	8.44	HS 35.74	64.3
5C1T	2.96	8.67	2.96	8.67	0.00	237.1

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 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. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.2	-170.3	152.0	-189.5
OPER	300.6C	-268.7	268.7	-300.6C	285.4	-283.9	253.4	-315.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18			
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00		
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00			
		-35.16 R	-27.04	177.93	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.17	1.67	6.87	HS 33.42	60.2
5C1T	3.40	8.07	3.02	8.98	0.00	241.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.600

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	-16.92	9.37	-13.02	7.21	-14.95	9.16	-11.50	7.05
OPER	5C1T	-13.83	8.74	-10.64	6.72	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.57	HS 81.25	146.2	
5C1T	8.28	13.52	0.00	662.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.600Dead Load Moment 1.4
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.8	173.7	-161.5	173.7	-161.5	158.5	-176.8	158.5	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18	
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00	
		-35.16 R	-27.04	177.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.40	1.74	6.40	HS 34.84	62.7
5C1T	3.14	8.38	3.14	8.38	0.00	251.6

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	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. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.2

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	175.0	-166.6	155.8	-185.8
OPER	300.6C	-268.7	268.7	-300.6C	291.6	-277.6	259.7	-309.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58			
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00		
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00			
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.80	1.91	5.36	HS 38.28	68.9
5C1T	4.04	7.43	3.60	8.29	0.00	287.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.700

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	-20.31	4.94	-15.62	3.80	-17.90	6.61	-13.77	5.08
OPER	5C1T	-16.79	6.57	-12.92	5.06	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.34	10.87	HS 66.74	120.1	
5C1T	6.72	18.23	0.00	538.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.0	171.2	-164.0	171.2	-164.0	162.2	-173.0	162.2	-
OPER 288.4	279.4	-279.4	279.4	-279.4	270.4	-288.4	270.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58	
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00	
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.99	1.99	4.99	HS 39.86	71.7
5C1T	3.74	7.72	3.74	7.72	0.00	299.6

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 3.800

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	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97			
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15		
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00			
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.21	3.84	2.87	4.30	HS 57.35	103.2
5C1T	5.65	6.68	5.05	7.48	0.00	404.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.6	0.0

Rat.	Shear	Capacity	Available	Capacity for LL+I
Veh.		VU	(-)	(+)
INV.	90.8		-66.8	72.9
OPER	151.3		-111.3	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.79	2.86	-19.07	2.20	-20.80	4.35	-16.00	3.35
OPER	5C1T	-20.08	4.67	-15.45	3.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.69	16.75	HS 53.89	97.0
5C1T	5.54	26.01	0.00	443.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.800

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	-
INV.	167.2	-168.1	167.2	-168.1	168.3	-167.0	168.3	-
167.0								
OPER	279.4	-279.4	279.4	-279.4	280.5	-278.3	280.5	-
278.3								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97	
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00	
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.64	107.3
5C1T	5.26	6.95	5.26	6.95	0.00	420.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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 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. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-13.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.5	-152.1	170.3	-171.3
OPER	300.6C	-268.7	268.7	-300.6C	315.8	-253.5	283.8	-285.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36			
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79		
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00			
		-44.23 R	-34.02	181.93	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.00	2.78	7.19	3.13	HS 55.65	100.2
5C1T	11.45	5.73	10.29	6.45	0.00	458.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.900

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	73.8
OPER	151.3	-109.7	123.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	2.99	-22.64	2.30	-23.57	3.15	-18.13	2.42
OPER	5C1T	-23.31	3.07	-17.93	2.36	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.24	23.46	HS 44.72	80.5	
5C1T	4.71	40.03	0.00	376.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-13.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.5	161.6	-173.7	161.6	-173.7	176.7	-158.5	176.7	-
OPER 264.2	279.4	-279.4	279.4	-279.4	294.6	-264.2	294.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00	
		-44.23 R	-34.02	181.93	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	7.46	2.90	7.46	2.90	HS 58.01	104.4
5C1T	10.68	5.97	10.68	5.97	0.00	477.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	12.97	1.49	11.73	1.69	53.6
5C1T	26.51	3.95	23.97	4.49	315.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.8	64.9
OPER	151.3	-108.1	108.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	33.80	-22.64	26.00	-23.57	26.06	-18.13	20.04
OPER	5C1T	-23.31	26.09	-17.93	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.36	69.1
5C1T	4.11	4.15	0.00	328.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 147.8	154.4	-180.9	187.5	-147.8
OPER 246.3	279.4	-279.4	312.5	-246.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	38.27	
		-95.00 L	-73.08	50.93	0.0	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend
HS20	12.14	1.56	12.14	1.56
5C1T	24.82	4.13	24.82	4.13

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 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. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.002

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	12.97	1.49	11.73	1.69	53.6
5C1T	26.51	3.95	23.97	4.49	315.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.5	7.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.8	64.9
OPER	151.3	-108.1	108.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.81	33.80	-26.01	26.00	-26.09	26.06	-20.07	20.04
OPER	5C1T	-26.30	26.09	-20.23	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.36	69.1
5C1T	4.11	4.15	0.00	328.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.14	1.56	12.14	1.56	HS 31.12	56.0
5C1T	24.82	4.13	24.82	4.13	0.00	330.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.084

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.6	-152.0	170.4	-171.2
OPER	300.6C	-268.7	268.7	-300.6C	316.0	-253.3	284.0	-285.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14			
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71		
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00			
		-45.02 L	-34.63	-38.42	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.90	2.78	7.10	3.13	HS 55.54	100.0
5C1T	11.69	5.63	10.51	6.34	0.00	450.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.100Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.6 0.0 6.0

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -73.8 65.9
OPER 151.3 -123.0 109.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	29.42	-2.19	22.63	-3.15	23.54	-2.42	18.10
OPER	5C1T	-3.04	23.11	-2.34	17.77	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.45	2.24	HS 44.78	80.6
5C1T	40.45	4.75	0.00	380.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.100

Dead Load Moment Superimposed Dead Load Moment
-1.4 -13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14	
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00	
		-45.02 L	-34.63	-38.42	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.36	2.89	7.36	2.89	HS 57.89	104.2
5C1T	10.90	5.86	10.90	5.86	0.00	469.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.084

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.4

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	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53			
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18		14.35	
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00			
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.42	103.4
5C1T	5.71	6.56	5.11	7.34	0.00	408.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.200Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.5 0.0 4.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -72.8 66.8
OPER 151.3 -121.3 111.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.38	20.77	-3.37	15.98
OPER	5C1T	-4.59	19.89	-3.53	15.30	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.60	2.70	HS 53.96	97.1
5C1T	26.41	5.60	0.00	448.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.200

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00	
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.71	107.5
5C1T	5.31	6.82	5.31	6.82	0.00	424.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.084

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.2	156.2	-185.4
OPER	300.6C	-268.7	268.7	-300.6C	292.2	-277.0	260.3	-309.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93			
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00		
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	0.00			
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.79	1.92	5.34	HS 38.36	69.1
5C1T	4.07	7.31	3.62	8.15	0.00	289.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.94	20.30	-3.80	15.62	-6.65	17.86	-5.11	13.74
OPER	5C1T	-6.52	16.62	-5.02	12.78	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.80	3.34	HS 66.81	120.3
5C1T	18.35	6.80	0.00	544.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.300Dead Load Moment 0.7
Superimposed Dead Load Moment 7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.7	171.0	-164.3	171.0	-164.3	162.6	-172.7	162.6	-
OPER 287.8	279.4	-279.4	279.4	-279.4	271.0	-287.8	271.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 R	62.62	106.93	0.0	61.47	78.93	
		-34.71 L	-26.70	38.97	0.0	-28.30	62.18	0.00
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.00	4.97	39.95	71.9
5C1T	3.77	7.59	0.00	301.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.084

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.7	-169.9	152.5	-189.1
OPER	300.6C	-268.7	268.7	-300.6C	286.2	-283.1	254.2	-315.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32			
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00		
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00			
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.15	1.68	6.85	HS 33.53	60.3
5C1T	3.43	7.94	3.04	8.84	0.00	243.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.2 0.0 1.6

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-9.37	16.91	-7.21	13.01	-9.20	14.91	-7.08	11.47
OPER	5C1T	-8.72	13.65	-6.71	10.50	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.56	4.07	HS 81.34	146.4
5C1T	13.55	8.40	0.00	671.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.400Dead Load Moment 1.3
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.3	173.4	-161.9	173.4	-161.9	159.0	-176.3	159.0	-
OPER 293.9	279.4	-279.4	279.4	-279.4	264.9	-293.9	264.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32	
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00	
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.75	6.39	1.75	6.39	HS 34.94	62.9
5C1T	3.17	8.24	3.17	8.24	0.00	253.7

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 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. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.084

LFD - Moment Values

Compact Values (C)		M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
	4110/ sqrt Fy			
top	22.62	0.00	390.83	109.1
bott	22.62	15.64		106.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-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	87.83	L	67.56	69.71	0.0	77.68	59.75	83.71		
		-20.50	L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00	
OPER	5C1T	87.09	L	66.99	32.71	0.0	0.00	0.00	0.00		
		-34.42	L	-26.47	-34.42	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.94	8.02	1.72	8.92	HS 34.43	62.0
5C1T	3.26	8.29	2.89	9.22	0.00	231.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.500

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	-116.5	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	-13.38	13.38	-10.29	10.29	-11.98	12.00	-9.21	9.23
OPER	5C1T	-11.12	11.15	-8.55	8.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.21	HS 104.25	187.7
5C1T	10.48	10.43	0.00	834.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.500Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 177.6	174.3	-161.0	174.3	-161.0
OPER 296.1	279.4	-279.4	279.4	-279.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.83 L	67.56	69.71	0.0	77.68	59.75
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41
OPER	5C1T	87.09 L	66.99	32.71	0.0	0.00	0.00
		-34.42 L	-26.47	-34.42	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber	bottom fiber	top fiber	bottom fiber
	+bend	-bend	+bend	-bend
HS20	1.79	8.32	1.79	8.32
5C1T	3.02	8.60	3.02	8.60

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.600

	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. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.600

Dead Load Moment Superimposed Dead Load Moment
1.3 13.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.6	-170.0	152.4	-189.2
OPER	300.6C	-268.7	268.7	-300.6C	286.0	-283.3	254.0	-315.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10			
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00		
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00			
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.16	1.67	6.86	HS 33.50
5C1T	3.41	8.11	3.03	9.02	0.00 242.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-16.91	9.37	-13.01	7.21	-14.88	9.23	-11.45	7.10
OPER	5C1T	-13.64	8.76	-10.49	6.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.07	7.56	HS 81.40	146.5	
5C1T	8.41	13.47	0.00	673.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.600Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	173.5	-161.8	173.5	-161.8	158.8	-176.4	158.8	-
OPER 294.1	279.4	-279.4	279.4	-279.4	264.7	-294.1	264.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10	
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00	
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.75	6.39	1.75	6.39	HS 34.92	62.9
5C1T	3.16	8.42	3.16	8.42	0.00	252.9

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 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. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.1	-166.5	155.9	-185.7
OPER	300.6C	-268.7	268.7	-300.6C	291.8	-277.4	259.9	-309.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49			
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00		
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00			
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.80	1.91	5.35	HS 38.31	69.0
5C1T	4.07	7.45	3.62	8.31	0.00	289.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.700

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	-67.9	71.8
OPER	151.3	-113.1	119.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.30	4.94	-15.62	3.80	-17.84	6.68	-13.72	5.14
OPER	5C1T	-16.59	6.58	-12.76	5.06	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.34	10.75	HS 66.86	120.3	
5C1T	6.82	18.19	0.00	545.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.9	171.2	-164.1	171.2	-164.1	162.4	-172.9	162.4	-
OPER 288.2	279.4	-279.4	279.4	-279.4	270.6	-288.2	270.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49	
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00	
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.00	4.99	2.00	4.99	HS 39.89	71.8
5C1T	3.77	7.74	3.77	7.74	0.00	301.5

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 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. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 4.800

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88			
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07		
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00			
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.20	3.84	2.87	4.30	HS 57.31
5C1T	5.62	6.71	5.03	7.51	0.00 402.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-4.4
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.9	72.8
OPER	151.3	-111.5	121.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.74	4.41	-15.96	3.40
OPER	5C1T	-19.87	4.66	-15.28	3.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.70	16.48	HS 54.00	97.2
5C1T	5.61	26.04	0.00	449.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88	
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00	
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.59	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.2

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	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. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.1	-152.5	169.9	-171.6
OPER	300.6C	-268.7	268.7	-300.6C	315.2	-254.1	283.2	-286.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28			
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71		
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00			
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.91	2.79	7.11	3.14	HS 55.78	100.4
5C1T	11.32	5.76	10.17	6.48	0.00	460.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.9	73.7
OPER	151.3	-109.9	122.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.97	-22.63	2.28	-23.51	3.18	-18.08	2.44
OPER	5C1T	-23.07	3.09	-17.74	2.38	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.24	23.20	HS 44.81	80.7
5C1T	4.76	39.79	0.00	381.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 4.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.9	161.8	-173.5	161.8	-173.5	176.4	-158.9	176.4	-
OPER 264.8	279.4	-279.4	279.4	-279.4	294.0	-264.8	294.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28	
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00	
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.38	2.91	7.38	2.91	HS 58.13	104.6
5C1T	10.55	6.00	10.55	6.00	0.00	480.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-29.1

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	199.6	-142.0	180.4	-161.2
OPER	300.6C	-268.7	268.7	-300.6C	332.7	-236.6	300.7	-268.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.72	1.50	11.50	1.70	HS 29.90	53.8
5C1T	26.27	3.99	23.75	4.53	0.00	319.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.9	64.9
OPER	151.3	-108.2	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	-29.42	33.80	-22.63	26.00	-23.51	26.03	-18.08	20.02
OPER	5C1T	-23.07	26.04	-17.74	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.44	69.2
5C1T	4.16	4.16	0.00	332.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-29.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 148.4	154.8	-180.5	154.8	-180.5	186.9	-148.4	186.9	-
OPER 247.4	279.4	-279.4	279.4	-279.4	311.4	-247.4	311.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	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	11.91	1.56	11.91	1.56	HS 31.25	56.3
5C1T	24.59	4.17	24.59	4.17	0.00	333.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -29.1

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	199.6	-142.0	180.4	-161.2
OPER	300.6C	-268.7	268.7	-300.6C	332.7	-236.6	300.7	-268.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00			
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.72	1.50	11.50	1.70	53.8
5C1T	26.27	3.99	23.75	4.53	319.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.4	7.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	64.9
OPER	151.3	-108.2	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	-33.80	33.80	-26.00	26.00	-26.03	26.03	-20.02	20.02
OPER	5C1T	-26.04	26.04	-20.03	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.44	69.2
5C1T	4.16	4.16	0.00	332.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-29.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 148.4	154.8	-180.5	154.8	-180.5	186.9	-148.4	186.9	-
OPER 247.4	279.4	-279.4	279.4	-279.4	311.4	-247.4	311.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	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	11.91	1.56	11.91	1.56	HS 31.25	56.3
5C1T	24.59	4.17	24.59	4.17	0.00	333.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.100

	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. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.1	-152.5	169.9	-171.6
OPER	300.6C	-268.7	268.7	-300.6C	315.2	-254.1	283.2	-286.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06			
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63		
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00	0.00			
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.78	2.79	6.99	3.14	HS 55.78 100.4
5C1T	11.32	5.76	10.17	6.48	0.00 460.6

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 5.100

HS20 5C1T

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	65.9
OPER	151.3	-122.9	109.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-2.85	29.42	-2.19	22.63	-3.18	23.51	-2.44	18.08
OPER	5C1T	-3.09	23.07	-2.38	17.74	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.20	2.24	HS 44.81	80.7
5C1T	39.79	4.76	0.00	381.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.9	161.8	-173.5	161.8	-173.5	176.4	-158.9	176.4	-
OPER 264.8	279.4	-279.4	279.4	-279.4	294.0	-264.8	294.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06	
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00	0.00	
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.26	2.91	7.26	2.91	HS 58.13	104.6
5C1T	10.55	6.00	10.55	6.00	0.00	480.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.82	28.67	28.67	1.699
			999999.000
			98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45			
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10		38.27	
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00			
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.20	3.84	2.87	4.30	HS 57.31	103.2
5C1T	5.62	6.71	5.03	7.51	0.00	402.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.8	66.9
OPER	151.3	-121.3	111.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.41	20.74	-3.40	15.96
OPER	5C1T	-4.66	19.87	-3.58	15.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.48	2.70	HS 54.00	97.2
5C1T	26.04	5.61	0.00	449.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45	
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00	
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.59	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.300

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 5.300

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.1	-166.5	155.9	-185.7
OPER	300.6C	-268.7	268.7	-300.6C	291.8	-277.4	259.9	-309.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84			
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00		
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00	0.00			
		-37.24 L	-28.65	-12.12	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	2.15	4.80	1.91	38.31	69.0
5C1T	4.07	7.45	3.62	0.00	289.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 3.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.8	67.9
OPER	151.3	-119.6	113.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.94	20.30	-3.80	15.62	-6.68	17.84	-5.14	13.72
OPER	5C1T	-6.58	16.59	-5.06	12.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.75	3.34	HS 66.86	120.3
5C1T	18.19	6.82	0.00	545.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.9	171.2	-164.1	171.2	-164.1	162.4	-172.9	162.4	-
OPER 288.2	279.4	-279.4	279.4	-279.4	270.6	-288.2	270.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	81.40 R	62.61	130.84	0.0	61.60	47.39
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00
		-37.24 L	-28.65	-12.12	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	2.00	4.99	2.00	4.99
5C1T	3.77	7.74	3.77	7.74

HS 39.89 71.8
0.00 301.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.6	-170.0	152.4	-189.2
OPER	300.6C	-268.7	268.7	-300.6C	286.0	-283.3	254.0	-315.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23			
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10		0.00	
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00			
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.16	1.67	6.86	HS 33.50	60.3
5C1T	3.41	8.07	3.03	8.99	0.00	242.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.400Dead 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 68.8
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	-9.37	16.91	-7.21	13.01	-9.23	14.88	-7.10	11.45
OPER	5C1T	-8.76	13.64	-6.74	10.49	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.56	4.07	HS 81.40	146.5
5C1T	13.47	8.41	0.00	673.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.4

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 176.4	173.5	-161.8	173.5	-161.8	158.8	-176.4	158.8	-
OPER 294.1	279.4	-279.4	279.4	-279.4	264.7	-294.1	264.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber	Rating bottom fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
HS20	1.75	6.39	1.75	34.92	62.9
5C1T	3.16	8.38	3.16	0.00	252.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.500

	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	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. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.82	28.67	28.67	1.699	999999.000	98.673

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.17		106.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.4	-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	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63			
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15		0.00	
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00			
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.94	8.02	1.72	8.92	HS 34.43	62.0
5C1T	3.26	8.29	2.89	9.22	0.00	231.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.500

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	0.0 0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.3

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	-13.38	13.38	-10.29	10.29	-12.00	11.98	-9.23	9.21
OPER	5C1T	-11.15	11.12	-8.58	8.55	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.22	HS 104.33	187.8
5C1T	10.44	10.47	0.00	835.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.500Dead Load Moment 1.5
Superimposed Dead Load Moment 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63	
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00	
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	8.32	1.79	8.32	HS 35.90	64.6
5C1T	3.02	8.60	3.02	8.60	0.00	241.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.387

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.7	-169.9	152.5	-189.1
OPER	300.6C	-268.7	268.7	-300.6C	286.2	-283.1	254.2	-315.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02			
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00		
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00			
		-35.51 R	-27.31	225.76	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.15	1.68	6.85	HS 33.53	60.3
5C1T	3.43	7.97	3.04	8.87	0.00	243.4

SHEAR 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 5C1T
 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	-16.91	9.37	-13.01	7.21	-14.91	9.20	-11.47	7.08
OPER	5C1T	-13.65	8.72	-10.50	6.71	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.07	7.56	HS 81.34	146.4	
5C1T	8.40	13.55	0.00	671.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.600Dead Load Moment 1.3
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 176.3	173.4	-161.9	173.4	-161.9	159.0	-176.3	159.0	-
OPER 293.9	279.4	-279.4	279.4	-279.4	264.9	-293.9	264.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00
		-35.51 R	-27.31	225.76	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.75	6.39	1.75	6.39	HS 34.94	62.9
5C1T	3.17	8.28	3.17	8.28	0.00	253.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.700

	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 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. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.387

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 5.700

Dead Load Moment 0.7
 Superimposed Dead Load Moment 7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.2	156.2	-185.4
OPER	300.6C	-268.7	268.7	-300.6C	292.2	-277.0	260.3	-309.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41			
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00		
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00	0.00			
		-37.90 R	-29.16	227.37	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.79	1.92	5.34	HS 38.36	69.1
5C1T	4.07	7.31	3.62	8.15	0.00	289.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.700

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	-20.30	4.94	-15.62	3.80	-17.86	6.65	-13.74	5.11
OPER	5C1T	-16.62	6.52	-12.78	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.34	10.80	HS 66.81	120.3
5C1T	6.80	18.35	0.00	544.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.700Dead Load Moment 0.7
Superimposed Dead Load Moment 7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.7	171.0	-164.3	171.0	-164.3	162.6	-172.7	162.6	-
OPER 287.8	279.4	-279.4	279.4	-279.4	271.0	-287.8	271.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41	
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00	0.00	
		-37.90 R	-29.16	227.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.97	2.00	4.97	HS 39.95	71.9
5C1T	3.77	7.59	3.77	7.59	0.00	301.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.387

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.4

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	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80			
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98		
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00			
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.42 103.4
5C1T	5.71	6.56	5.11	7.34	0.00 408.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.77	4.38	-15.98	3.37
OPER	5C1T	-19.89	4.59	-15.30	3.53	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.70	16.60	HS 53.96	97.1
5C1T	5.60	26.41	0.00	448.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.800

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80	
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00	
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.71	107.5
5C1T	5.31	6.82	5.31	6.82	0.00	424.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.900

	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. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.387

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.6	-152.0	170.4	-171.2
OPER	300.6C	-268.7	268.7	-300.6C	316.0	-253.3	284.0	-285.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19			
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63		
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00			
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.03	2.78	7.22	3.13	HS 55.54	100.0
5C1T	11.69	5.63	10.51	6.34	0.00	450.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.9	73.8
OPER	151.3	-109.8	123.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.97	-22.63	2.28	-23.54	3.15	-18.10	2.42
OPER	5C1T	-23.11	3.04	-17.77	2.34	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.24	23.45	HS 44.78	80.6	
5C1T	4.75	40.45	0.00	380.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.4	161.5	-173.8	161.5	-173.8	176.9	-158.4	176.9	-
OPER 264.0	279.4	-279.4	279.4	-279.4	294.8	-264.0	294.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19	
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00	
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.49	2.89	7.49	2.89	HS 57.89	104.2
5C1T	10.90	5.86	10.90	5.86	0.00	469.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.387

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15		110.02	
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.97	1.49	11.73	1.69	HS 29.76	53.6
5C1T	27.59	3.95	24.95	4.49	0.00	315.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.9	64.8
OPER	151.3	-108.2	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	-29.42	33.81	-22.63	26.01	-23.54	26.09	-18.10	20.07
OPER	5C1T	-23.11	26.30	-17.77	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.36	69.1
5C1T	4.15	4.11	0.00	328.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.0	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.8	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
OPER 246.3	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	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	12.14	1.56	12.14	1.56	HS 31.12	56.0
5C1T	25.84	4.13	25.84	4.13	0.00	330.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.2	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.7	-235.6	301.7	-267.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15		110.02	
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.97	1.49	11.73	1.69	HS 29.76
5C1T	27.59	3.95	24.95	4.49	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.5	7.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.9	64.8
OPER	151.3	-108.2	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	-33.80	33.81	-26.00	26.01	-26.06	26.09	-20.04	20.07
OPER	5C1T	-26.09	26.30	-20.07	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.36	69.1
5C1T	4.15	4.11	0.00	328.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -30.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	154.4	-180.9	154.4	-180.9	187.5	-147.8	187.5	-
147.8								
OPER	279.4	-279.4	279.4	-279.4	312.5	-246.3	312.5	-
246.3								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	12.14	1.56	12.14	1.56	HS 31.12	56.0
5C1T	25.84	4.13	25.84	4.13	0.00	330.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.100

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-13.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.5	-152.1	170.3	-171.3
OPER	300.6C	-268.7	268.7	-300.6C	315.8	-253.5	283.8	-285.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98			
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54		
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00			
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.87	2.78	7.07	3.13	HS 55.65	100.2
5C1T	11.45	5.73	10.29	6.45	0.00	458.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.8	65.8
OPER	151.3	-123.0	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.86	29.44	-2.20	22.64	-3.15	23.57	-2.42	18.13
OPER	5C1T	-3.07	23.31	-2.36	17.93	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.46	2.24	HS 44.72	80.5
5C1T	40.03	4.71	0.00	376.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.100

Dead Load Moment Superimposed Dead Load Moment
-1.4 -13.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.5	161.6	-173.7	161.6	-173.7	176.7	-158.5	176.7	-
OPER 264.2	279.4	-279.4	279.4	-279.4	294.6	-264.2	294.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98	
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00	
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.34	2.90	7.34	2.90	HS 58.01	104.4
5C1T	10.68	5.97	10.68	5.97	0.00	477.9

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 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. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.200

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	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37			
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02		62.18	
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00			
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.21	3.84	2.87	4.30	HS 57.35	103.2
5C1T	5.65	6.68	5.05	7.48	0.00	404.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.4	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.86	24.79	-2.20	19.07	-4.35	20.80	-3.35	16.00
OPER	5C1T	-4.67	20.08	-3.59	15.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.75	2.69	HS 53.89	97.0
5C1T	26.01	5.54	0.00	443.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.200

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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37	
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00	
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.64	107.3
5C1T	5.26	6.95	5.26	6.95	0.00	420.4

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 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. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.83	28.67	28.67	1.699
			999999.000
			99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 6.300

Dead Load Moment 0.8
 Superimposed Dead Load Moment 8.2

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	175.0	-166.6	155.8	-185.8
OPER	300.6C	-268.7	268.7	-300.6C	291.6	-277.6	259.7	-309.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76			
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02		0.00	
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00			
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.80	1.91	5.36	HS 38.28	68.9
5C1T	4.04	7.43	3.60	8.29	0.00	287.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-4.94	20.31	-3.80	15.62	-6.61	17.90	-5.08	13.77
OPER	5C1T	-6.57	16.79	-5.06	12.92	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.87	3.34	HS 66.74	120.1
5C1T	18.23	6.72	0.00	538.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.0	171.2	-164.0	171.2	-164.0	162.2	-173.0	162.2	-
OPER 288.4	279.4	-279.4	279.4	-279.4	270.4	-288.4	270.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76	
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00	
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.99	4.99	1.99	4.99	HS 39.86	71.7
5C1T	3.74	7.72	3.74	7.72	0.00	299.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.400

	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 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. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 13.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.2	-170.3	152.0	-189.5
OPER	300.6C	-268.7	268.7	-300.6C	285.4	-283.9	253.4	-315.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15			
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00		
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00			
		-35.16 L	-27.04	13.41	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.17	1.67	6.87	HS 33.42	60.2
5C1T	3.40	8.07	3.02	8.98	0.00	241.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-9.37	16.92	-7.21	13.02	-9.16	14.95	-7.05	11.50
OPER	5C1T	-8.74	13.83	-6.72	10.64	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	7.57	4.06	81.25
5C1T	13.52	8.28	0.00
			Load Capacity (tons)
			146.2
			662.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.8	173.7	-161.5	173.7	-161.5	158.5	-176.8	158.5	-
OPER 294.7	279.4	-279.4	279.4	-279.4	264.1	-294.7	264.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15	
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00	
		-35.16 L	-27.04	13.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.40	1.74	6.40	HS 34.84	62.7
5C1T	3.14	8.38	3.14	8.38	0.00	251.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.83	28.67	28.67	1.699	999999.000	99.300

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.71		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.8	-171.8	150.6	-191.0
OPER	300.6C	-268.7	268.7	-300.6C	283.0	-286.3	251.0	-318.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54			
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07		0.00	
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00			
		-34.26 L	-26.35	13.41	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.93	8.13	1.71	9.04	HS 34.27	61.7
5C1T	3.20	8.36	2.84	9.29	0.00	227.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.9	69.7
OPER	151.3	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.39	13.39	-10.30	10.30	-11.93	12.04	-9.18	9.26
OPER	5C1T	-11.10	11.30	-8.54	8.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.20	HS 104.10	187.4
5C1T	10.50	10.28	0.00	822.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.500

Dead Load Moment	Superimposed Dead Load Moment
1.6	16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.0	-178.2	157.0	-
OPER 297.1	279.4	-279.4	279.4	-279.4	261.7	-297.1	261.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54	
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07	0.00
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00	
		-34.26 L	-26.35	13.41	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	1.79	8.44	1.79	8.44	HS 35.74	64.3
5C1T	2.96	8.67	2.96	8.67	0.00	237.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.600

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.7	151.7	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.8	-284.5	252.8	-316.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93			
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07		0.00	
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00	0.00			
		-34.21 L	-26.31	14.28	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.13	1.66	6.82	HS 33.30	59.9
5C1T	3.34	8.32	2.96	9.25	0.00	237.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.4	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	-16.93	9.38	-13.02	7.22	-14.84	9.27	-11.41	7.13
OPER	5C1T	-13.57	8.87	-10.44	6.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.07	7.54	HS 81.39	146.5	
5C1T	8.46	13.30	0.00	676.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93	
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00	0.00	
		-34.21 L	-26.31	14.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.37	1.74	6.37	HS 34.72	62.5
5C1T	3.09	8.63	3.09	8.63	0.00	247.1

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 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. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

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	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.4	-278.9	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33			
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07		0.00	
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00			
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.78	1.90	5.33	HS 38.02	68.4
5C1T	3.97	7.78	3.54	8.68	0.00	282.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-2.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.9	71.7
OPER	151.3	-113.2	119.6

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	-20.31	4.96	-15.63	3.81	-17.79	6.71	-13.69	5.16
OPER	5C1T	-16.57	6.65	-12.75	5.12	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.34	10.69	HS 66.86	120.4	
5C1T	6.83	17.97	0.00	546.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 9.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.8	171.7	-163.6	171.7	-163.6	161.5	-173.8	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	4.97	1.98	4.97	HS 39.60	71.3
5C1T	3.68	8.09	3.68	8.09	0.00	294.6

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 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. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.800

Dead Load Moment 0.0
Superimposed Dead Load Moment 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	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	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72			
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98		
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00			
		-38.13 R	-29.33	252.07	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	3.18	3.83	2.84	56.75	102.2
5C1T	5.48	7.06	4.89	0.00	391.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.9	72.7
OPER	151.3	-111.6	121.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.84	-19.05	2.19	-20.70	4.45	-15.92	3.42
OPER	5C1T	-19.81	4.73	-15.24	3.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.70	16.35	HS 54.06	97.3
5C1T	5.63	25.59	0.00	450.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.800Dead Load Moment 0.0
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.2	-168.0	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72	
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00	
		-38.13 R	-29.33	252.07	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 59.03	106.3
5C1T	5.09	7.34	5.09	7.34	0.00	407.2

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 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. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-11.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.0	-153.5	168.8	-172.7
OPER	300.6C	-268.7	268.7	-300.6C	313.4	-255.9	281.4	-287.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00	
		-42.36 R	-32.58	167.46	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.67	2.76	6.89	3.11	HS 55.23	99.4
5C1T	10.64	6.04	9.55	6.80	0.00	483.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-5.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-29.42	2.96	-22.63	2.28	-23.47	3.20	-18.05	2.46
OPER	5C1T	-22.99	3.18	-17.69	2.45	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	2.24	23.05	44.85
5C1T	4.78	38.59	0.00
			Load Capacity (tons)
			80.7
			382.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-11.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	162.5	-172.7	162.5	-172.7	175.3	-160.0	175.3	-
160.0 OPER 266.6	279.4	-279.4	279.4	-279.4	292.2	-266.6	292.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00	
		-42.36 R	-32.58	167.46	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	7.15	2.88	7.15	2.88	HS 57.55	103.6
5C1T	9.92	6.30	9.92	6.30	0.00	503.6

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	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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.88	1.50	8.93	1.70	54.1
5C1T	20.58	4.03	18.59	4.57	322.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.0	65.2
OPER	151.3	-108.3	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.97	-22.63	26.13	-23.47	25.86	-18.05	19.89
OPER	5C1T	-22.99	25.68	-17.69	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.39	69.1
5C1T	4.18	4.23	0.00	334.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-2.8	-27.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	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	9.25	1.57	9.25	1.57	HS 31.40	56.5
5C1T	19.26	4.21	19.26	4.21	0.00	336.6

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	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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.888

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 7.000

Dead Load Superimposed Dead Load
 Moment Moment
 -2.8 -27.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	198.4	-143.2	179.2	-162.4
OPER	300.6C	-268.7	268.7	-300.6C	330.7	-238.6	298.7	-270.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.88	1.50	8.93	1.70	54.1
5C1T	20.58	4.03	18.59	4.57	322.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.3	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	65.2
OPER	151.3	-108.3	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.97	-26.00	26.13	-25.99	25.86	-20.00	19.89
OPER	5C1T	-25.95	25.68	-19.96	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.92	1.92	HS 38.39	69.1
5C1T	4.18	4.23	0.00	334.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -27.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 149.6	155.6	-179.7	155.6	-179.7	185.7	-149.6	185.7	-
OPER 249.4	279.4	-279.4	279.4	-279.4	309.4	-249.4	309.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.25	1.57	9.25	1.57	HS 31.40	56.5
5C1T	19.26	4.21	19.26	4.21	0.00	336.6

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.100

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -12.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.5	-153.1	169.3	-172.2
OPER	300.6C	-268.7	268.7	-300.6C	314.2	-255.1	282.2	-287.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89			
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46		
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00			
		-43.80 L	-33.69	32.54	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.69	2.80	6.90	3.15	56.07
5C1T	11.08	5.82	9.95	6.55	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	5.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.5	66.2
OPER	151.3	-122.5	110.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	29.62	-2.92	22.79	-3.74	23.37	-2.88	17.97
OPER	5C1T	-3.75	22.61	-2.88	17.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	19.37	2.23	HS 44.68	80.4
5C1T	32.68	4.88	0.00	390.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-12.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.5	162.2	-173.1	162.2	-173.1	175.8	-159.5	175.8	-
OPER 265.8	279.4	-279.4	279.4	-279.4	293.0	-265.8	293.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89	
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00	
		-43.80 L	-33.69	32.54	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	7.17	2.92	7.17	2.92	HS 58.43	105.2
5C1T	10.33	6.07	10.33	6.07	0.00	485.6

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 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. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.77	28.67	28.67	1.699
			999999.000
			95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -0.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.0	-160.6	161.8	-179.8
OPER	300.6C	-268.7	268.7	-300.6C	301.6	-267.7	269.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28			
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93		86.10	
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00			
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.85	2.87	4.30	HS 57.34	103.2
5C1T	5.65	6.70	5.05	7.50	0.00	403.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.4	0.0 4.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.5	67.1
OPER	151.3	-120.8	111.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-3.79	24.99	-2.92	19.22	-4.48	20.63	-3.45	15.87
OPER	5C1T	-5.47	19.38	-4.20	14.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.19	2.69	HS 53.75	96.7
5C1T	22.10	5.77	0.00	461.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.200

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-0.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.1	167.3	-168.0	167.3	-168.0	168.2	-167.1	168.2	-
OPER 278.5	279.4	-279.4	279.4	-279.4	280.3	-278.5	280.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28	
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00	
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.98	4.00	2.98	4.00	HS 59.62	107.3
5C1T	5.25	6.97	5.25	6.97	0.00	420.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.300

	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. S02
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.1

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	175.7	-165.9	156.5	-185.1
OPER	300.6C	-268.7	268.7	-300.6C	292.8	-276.4	260.9	-308.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68			
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00		
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00			
		-37.96 L	-29.20	35.72	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	2.15	4.76	1.92	5.32	HS 38.40	69.1
5C1T	4.10	7.28	3.65	8.12	0.00	292.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 2.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.5	68.1
OPER	151.3	-119.2	113.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.89	20.39	-3.76	15.68	-6.71	17.75	-5.16	13.65
OPER	5C1T	-7.39	16.16	-5.68	12.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.67	3.34	HS 66.82	120.3
5C1T	16.14	7.02	0.00	561.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.3	170.8	-164.5	170.8	-164.5	163.0	-172.3	163.0	-
OPER 287.2	279.4	-279.4	279.4	-279.4	271.6	-287.2	271.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68	
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00	
		-37.96 L	-29.20	35.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.00	4.95	2.00	4.95	HS 39.98	72.0
5C1T	3.81	7.57	3.81	7.57	0.00	304.4

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 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. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.8	-168.8	153.6	-188.0
OPER	300.6C	-268.7	268.7	-300.6C	288.0	-281.3	256.0	-313.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07			
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93		0.00	
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00			
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.90	6.06	1.69	6.75	HS 33.78	60.8
5C1T	3.50	7.63	3.11	8.50	0.00	249.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.1

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -70.6 69.1
OPER 151.3 -117.6 115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.38	17.02	-7.21	13.09	-9.23	14.82	-7.10	11.40
OPER	5C1T	-9.45	13.22	-7.27	10.17	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.52	4.06	HS 81.20	146.2
5C1T	12.44	8.71	0.00	696.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.2	172.7	-162.6	172.7	-162.6	160.0	-175.2	160.0	-
OPER 292.1	279.4	-279.4	279.4	-279.4	266.7	-292.1	266.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07	
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00	
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.76	6.29	1.76	6.29	HS 35.20	63.4
5C1T	3.24	7.93	3.24	7.93	0.00	259.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.77	28.67	28.67	1.699	999999.000	95.954

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		4.18		108.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.2	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	287.0	-282.3	255.0	-314.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46			
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98		0.00	
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00			
		-37.69 R	-28.99	227.98	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.94	6.18	1.73	6.88	HS 34.50	62.1
5C1T	3.37	7.49	2.99	8.34	0.00	239.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.500

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	-0.4 0.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.48	13.52	-10.37	10.40	-11.97	11.93	-9.21	9.17
OPER	5C1T	-11.58	10.75	-8.91	8.27	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.16	5.18	HS 103.22	185.8
5C1T	10.01	10.86	0.00	801.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 12.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.8	173.1	-162.2	173.1	-162.2	159.5	-175.8	159.5	-
OPER 293.0	279.4	-279.4	279.4	-279.4	265.8	-293.0	265.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46	
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00	
		-37.69 R	-28.99	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.80	6.41	1.80	6.41	HS 35.96	64.7
5C1T	3.12	7.78	3.12	7.78	0.00	249.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600

	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. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.699
			999999.000
			102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.600

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

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	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85			
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00		
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00			
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.88	4.53	1.67	5.05	60.2
5C1T	3.58	7.00	3.18	7.80	254.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.0	0.0

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8	-68.5	71.1
OPER	151.3	-114.2	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.12	9.55	-13.17	7.34	-14.86	9.16	-11.43	7.04
OPER	5C1T	-13.97	8.47	-10.75	6.51	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.00	7.45	HS 80.05	144.1	
5C1T	8.18	14.00	0.00	654.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.600Dead Load Moment 0.9
Superimposed Dead Load Moment 9.5

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85	
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00	
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.74	4.71	1.74	4.71	HS 34.84	62.7
5C1T	3.32	7.27	3.32	7.27	0.00	265.2

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 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. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.700

Dead Load Moment Superimposed Dead Load Moment
0.3 3.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.4	-163.2	159.2	-182.4
OPER	300.6C	-268.7	268.7	-300.6C	297.3	-272.0	265.3	-304.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24			
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00		
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00	0.00			
		-42.29 R	-32.53	188.20	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	3.52	1.90	3.93	HS 37.99	68.4
5C1T	4.26	6.43	3.80	7.19	0.00	304.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-3.4
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.6	72.1
OPER	151.3	-112.6	120.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-20.51	5.15	-15.77	3.96	-17.81	6.59	-13.70	5.07
OPER	5C1T	-16.67	6.39	-12.82	4.91	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.30	10.94	HS 65.90
5C1T	6.76	18.81	0.00
			Load Capacity (tons)
			118.6
			540.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.700

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.1

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 169.7	169.0	-166.3	169.0	-166.3	165.6	-169.7	165.6	-
OPER 282.8	279.4	-279.4	279.4	-279.4	276.0	-282.8	276.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24	
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00	0.00	
		-42.29 R	-32.53	188.20	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.98	3.65	1.98	3.65	HS 39.53	71.2
5C1T	3.96	6.69	3.96	6.69	0.00	316.7

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 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. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.800

Dead Load Moment Superimposed Dead Load Moment
-0.7 -6.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	184.9	-156.7	165.7	-175.8
OPER	300.6C	-268.7	268.7	-300.6C	308.2	-261.1	276.2	-293.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63			
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10		
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00			
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.11	2.80	2.79	3.14	HS 55.75 100.4
5C1T	6.61	5.66	5.92	6.36	0.00 453.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 7.800
 HS20 5C1T
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.9 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.6	73.1
OPER	151.3	-111.0	121.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.68	2.79	-18.98	2.15	-20.73	4.29	-15.95	3.30
OPER	5C1T	-20.19	4.56	-15.53	3.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.70	17.02	HS 53.96	97.1
5C1T	5.50	26.72	0.00	439.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.800

Dead Load Moment Superimposed Dead Load Moment
-0.7 -6.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.1	164.6	-170.7	164.6	-170.7	172.2	-163.1	172.2	-
OPER 271.8	279.4	-279.4	279.4	-279.4	287.0	-271.8	287.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63	
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00	
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.90	2.92	2.90	2.92	HS 57.92	104.3
5C1T	6.15	5.89	6.15	5.89	0.00	471.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900

	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 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. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-2.1 -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	193.8	-147.8	174.6	-167.0
OPER	300.6C	-268.7	268.7	-300.6C	323.0	-246.3	291.0	-278.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03			
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98		153.07	
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00			
		-53.56 R	-41.20	193.77	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	9.23	2.18	8.32	43.67	78.6
5C1T	15.07	4.60	13.58	0.00	367.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.4	0.0

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8		-65.6 74.0
OPER	151.3		-109.4 123.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.37	2.91	-22.59	2.24	-23.54	2.89	-18.11	2.22
OPER	5C1T	-23.58	3.00	-18.14	2.31	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating	Factor	Rating	Load	
	(-)	(+)	Value	Capacity	
				(tons)	
HS20	2.23	25.43	HS 44.68	80.4	
5C1T	4.64	41.12	0.00	371.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-2.1 -20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.2	158.7	-176.6	158.7	-176.6	181.1	-154.2	181.1	-
OPER 257.0	279.4	-279.4	279.4	-279.4	301.8	-257.0	301.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00	
		-53.56 R	-41.20	193.77	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.62	2.28	8.62	2.28	HS 45.58	82.0
5C1T	14.08	4.80	14.08	4.80	0.00	383.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.699	999999.000	102.944

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.00		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.35	13.35	1.54	27.07
5C1T	29.23	3.12	26.49	3.55	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.6	63.9
OPER	151.3	-107.7	106.5

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	-29.37	36.19	-22.59	27.84	-23.54	26.36	-18.11	20.28
OPER	5C1T	-23.58	27.13	-18.14	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.77	HS 35.31	63.6
5C1T	4.04	3.92	0.00	314.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	13.81	1.42	13.81	1.42	HS 28.35	51.0
5C1T	27.41	3.26	27.41	3.26	0.00	261.0

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 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

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	205.0	-136.6	185.8	-155.7
OPER	300.6C	-268.7	268.7	-300.6C	341.7	-227.6	309.7	-259.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98		157.85	
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00			
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.35	13.35	1.54	HS 27.07 48.7
5C1T	29.23	3.12	26.49	3.55	0.00 249.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.9	-7.8	9.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.6	63.9
OPER	151.3	-107.7	106.5

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	-33.82	36.19	-26.01	27.84	-26.13	26.36	-20.10	20.28
OPER	5C1T	-26.68	27.13	-20.52	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.77	HS 35.31	63.6
5C1T	4.04	3.92	0.00	314.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -37.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.0	151.2	-184.1	151.2	-184.1	192.3	-143.0	192.3	-
OPER 238.3	279.4	-279.4	279.4	-279.4	320.5	-238.3	320.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	13.81	1.42	13.81	1.42	HS 28.35	51.0
5C1T	27.41	3.26	27.41	3.26	0.00	261.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.100

	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	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. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.67	28.67	28.67	1.699	999999.000	90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.8 -17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81			
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77		
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00			
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.15	2.75	8.24	3.11	HS 55.06 99.1
5C1T	13.06	5.39	11.76	6.08	0.00 430.9

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 8.100

HS20 5C1T

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.8	0.0	7.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.3	-124.6	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.56	32.21	-0.43	24.77	-1.24	24.21	-0.95	18.62
OPER	5C1T	-0.88	24.44	-0.67	18.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.40	2.01	HS 40.28	72.5
5C1T	142.22	4.42	0.00	353.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.8 -17.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81	
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00	
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.54	2.87	8.54	2.87	HS 57.43	103.4
5C1T	12.19	5.62	12.19	5.62	0.00	449.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.4

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	181.3	-160.3	162.1	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.2	-267.1	270.2	-299.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20			
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02		
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00			
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	3.27	3.86	2.92	4.32	HS 58.49	105.3
5C1T	5.70	6.64	5.10	7.43	0.00	408.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.6	0.0 6.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.8	65.8
OPER	151.3	-123.0	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.03	27.72	-0.79	21.32	-2.66	21.85	-2.05	16.81
OPER	5C1T	-2.34	21.45	-1.80	16.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	27.73	2.38	HS 47.50	85.5
5C1T	52.67	5.12	0.00	409.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.7	167.0	-168.3	167.0	-168.3	168.6	-166.7	168.6	-
OPER 277.9	279.4	-279.4	279.4	-279.4	280.9	-277.9	280.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20	
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00	
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.04	4.01	3.04	4.01	HS 60.82	109.5
5C1T	5.30	6.91	5.30	6.91	0.00	424.3

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 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. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.9	-168.6	153.8	-187.8
OPER	300.6C	-268.7	268.7	-300.6C	288.2	-281.1	256.3	-313.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59			
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85	110.02		
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00			
		-35.20 L	-27.08	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.95	4.64	1.73	34.60	62.3
5C1T	3.75	7.99	3.33	0.00	266.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.5	0.0 4.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.8	66.8
OPER	151.3	-121.4	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	22.80	-2.29	17.54	-4.42	19.32	-3.40	14.86
OPER	5C1T	-4.09	18.62	-3.15	14.33	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
			Load Capacity (tons)
HS20	16.47	2.93	HS 58.60
5C1T	29.68	5.98	0.00
			105.5
			478.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 11.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.1	172.6	-162.7	172.6	-162.7	160.2	-175.1	160.2	-
OPER 291.8	279.4	-279.4	279.4	-279.4	267.0	-291.8	267.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59	
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85	110.02
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00	
		-35.20 L	-27.08	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.80	4.81	1.80	4.81	HS 36.05	64.9
5C1T	3.47	8.29	3.47	8.29	0.00	277.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.400

	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. S02
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.400

Dead Load Superimposed Dead Load
Moment Moment
2.0 20.5

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	166.9	-174.7	147.7	-193.9
OPER	300.6C	-268.7	268.7	-300.6C	278.2	-291.1	246.2	-323.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98			
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85		0.00	
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00			
		-30.17 L	-23.21	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.62	5.60	1.43	6.22	HS 28.58	51.4
5C1T	2.91	9.65	2.58	10.71	0.00	206.0

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 8.400

HS20 5C1T

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.1

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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-6.62	18.34	-5.09	14.11	-6.50	16.67	-5.00	12.83
OPER	5C1T	-6.09	15.87	-4.68	12.21	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	10.85	3.69	73.90
5C1T	19.68	7.12	0.00
			Load Capacity (tons)
			133.0
			569.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.400

Dead Load Moment 2.0
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.1	176.6	-158.7	176.6	-158.7	154.2	-181.1	154.2	-
OPER 301.9	279.4	-279.4	279.4	-279.4	256.9	-301.9	256.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98	
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00	
		-30.17 L	-23.21	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.49	5.81	1.49	5.81	HS 29.83	53.7
5C1T	2.69	10.01	2.69	10.01	0.00	215.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.500

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.67	28.67	28.67	1.699
			999999.000
			90.239

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.31		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.500

Dead Load Moment 2.6
Superimposed Dead Load Moment 26.1

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	163.2	-178.4	144.0	-197.6
OPER	300.6C	-268.7	268.7	-300.6C	272.0	-297.3	240.0	-329.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38			
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85		0.00	
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00			
		-25.14 L	-19.34	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.44	6.87	1.27	7.61	HS 25.35	45.6
5C1T	2.62	11.83	2.31	13.10	0.00	184.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.500

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.2	0.0 1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-9.50	15.37	-7.31	11.82	-8.87	13.95	-6.82	10.73
OPER	5C1T	-8.43	13.29	-6.49	10.23	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.46	4.47	HS 89.48	161.1	
5C1T	14.01	8.62	0.00	689.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.500

Dead Load Moment Superimposed Dead Load Moment
2.6 26.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.8	179.1	-156.2	179.1	-156.2	150.4	-184.8	150.4	-
OPER 308.1	279.4	-279.4	279.4	-279.4	250.7	-308.1	250.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38	
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00	
		-25.14 L	-19.34	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.32	7.11	1.32	7.11	HS 26.49	47.7
5C1T	2.41	12.25	2.41	12.25	0.00	193.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.600

Dead Load Moment Superimposed Dead Load Moment
2.8 27.9

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	162.0	-179.6	142.8	-198.8
OPER	300.6C	-268.7	268.7	-300.6C	270.0	-299.3	238.0	-331.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77			
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85		0.00	
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00			
		-20.11 L	-15.47	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.38	8.64	1.21	9.56	HS 24.24	43.6
5C1T	2.55	14.88	2.25	16.47	0.00	179.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.600

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	-69.8	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	-12.31	11.85	-9.47	9.12	-11.52	11.20	-8.86	8.62
OPER	5C1T	-11.06	10.81	-8.51	8.31	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.67	5.89	HS 113.45	204.2
5C1T	10.52	10.77	0.00	841.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.600

Dead Load Moment Superimposed Dead Load Moment
2.8 27.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 186.1	179.9	-155.4	179.9	-155.4	149.2	-186.1	149.2	-
OPER 310.1	279.4	-279.4	279.4	-279.4	248.7	-310.1	248.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77	
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00	
		-20.11 L	-15.47	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.27	8.95	1.27	8.95	HS 25.34	45.6
5C1T	2.35	15.42	2.35	15.42	0.00	187.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.700

Dead Load Moment Superimposed Dead Load Moment
2.6 26.2

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	163.1	-178.5	143.9	-197.7
OPER	300.6C	-268.7	268.7	-300.6C	271.8	-297.5	239.8	-329.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16			
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85		0.00	
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00			
		-15.09 L	-11.60	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.38	11.45	1.22	12.68	HS 24.41	43.9
5C1T	2.70	19.72	2.38	21.84	0.00	190.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.700

Dead Load	Superimposed Dead Load
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	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.43	8.87	-12.64	6.82	-14.43	8.45	-11.10	6.50
OPER	5C1T	-14.03	8.18	-10.79	6.30	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.19	7.98	HS 83.83	150.9	
5C1T	8.18	14.41	0.00	654.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.700

Dead Load Moment	Superimposed Dead Load Moment
2.6	26.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.9	179.2	-156.1	179.2	-156.1	150.3	-184.9	150.3	-
OPER 308.2	279.4	-279.4	279.4	-279.4	250.6	-308.2	250.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16	
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00	
		-15.09 L	-11.60	58.85	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	1.27	11.86	1.27	11.86	HS 25.51	45.9
5C1T	2.49	20.43	2.49	20.43	0.00	199.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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. S02
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.800

Dead Load Moment 2.1
Superimposed Dead Load Moment 21.0

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	166.5	-175.0	147.3	-194.2
OPER	300.6C	-268.7	268.7	-300.6C	277.5	-291.7	245.6	-323.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55			
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85		0.00	
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00			
		-10.06 L	-7.74	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.66	16.84	1.47	18.69	HS 29.34	52.8
5C1T	3.31	29.01	2.93	32.19	0.00	234.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-2.9
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-67.9	71.7
OPER	151.3	-113.2	119.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-21.00	5.98	-16.15	4.60	-17.56	5.74	-13.51	4.42
OPER	5C1T	-17.54	5.41	-13.49	4.16	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.23	12.00	HS 64.66	116.4	
5C1T	6.45	22.09	0.00	516.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.800

Dead Load Moment Superimposed Dead Load Moment
2.1 21.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.5	176.9	-158.4	176.9	-158.4	153.8	-181.5	153.8	-
OPER 302.5	279.4	-279.4	279.4	-279.4	256.3	-302.5	256.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55	
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00	
		-10.06 L	-7.74	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.53	17.47	1.53	17.47	HS 30.62	55.1
5C1T	3.06	30.08	3.06	30.08	0.00	244.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.900

	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
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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.900

Dead Load Moment Superimposed Dead Load Moment
1.2 12.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.3	-169.3	153.1	-188.5
OPER	300.6C	-268.7	268.7	-300.6C	287.2	-282.1	255.2	-314.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94			
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85		0.00	
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00			
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	2.78	32.58	2.47	36.27	HS 49.34 88.8
5C1T	5.65	56.11	5.02	62.47	0.00 401.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-4.4
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.7
OPER	151.3	-111.5	121.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-25.95	3.01	-19.96	2.31	-20.89	3.12	-16.07	2.40
OPER	5C1T	-21.24	3.55	-16.34	2.73	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.58	23.33	HS 51.59	92.9	
5C1T	5.25	34.13	0.00	420.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 8.900Dead Load Moment 1.2
Superimposed Dead Load Moment 12.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.7	173.0	-162.2	173.0	-162.2	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94	
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00	
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.57	33.82	2.57	33.82	HS 51.42	92.6
5C1T	5.23	58.24	5.23	58.24	0.00	418.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
 Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	5C1T	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.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1T	999.00	999.00	999.00	999.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 9.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	70.2
OPER	151.3	-109.9	117.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.19	0.00	-24.00	0.00	-24.40	2.12	-18.77	1.63
OPER	5C1T	-25.07	0.00	-19.28	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.11	33.07	HS 42.29	76.1
5C1T	4.39	999.00	0.00	350.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S02
Check Point I. D. 9.000

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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	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	5C1T	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

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1T	999.00	999.00	999.00	999.00	0.00	999.0

BRIDGE / MEMBER DATA

Structure I. D. HAM500

Material of Construction SS
 Year of Construction 1959
 Roadway Width 32.000
 Number of Spans 8

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D. S03 Symmetry:

Span Length:	Span 1 23.917	Span 2 23.917	Span 3 23.917	Span 4 23.917	Span 5 23.917
	Span 6 23.917	Span 7 23.917	Span 8 23.917	Span 9 0.000	Span 10 0.000

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	23.917	1	0		0.0	0.0
2	1	23.917	1	0		0.0	0.0
3	1	23.917	1	0		0.0	0.0
4	1	23.917	1	0		0.0	0.0
5	1	23.917	1	0		0.0	0.0
6	1	23.917	1	0		0.0	0.0
7	1	23.917	1	0		0.0	0.0
8	1	23.917	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft) Left	Distributed Load (lbs/ft) Right	Length	Concentrated Load (kips)
1	W	0.000	688.0	688.0	23.917	0.0
1	P	11.958	0.0	0.0	0.000	0.1
2	W	0.000	688.0	688.0	23.917	0.0
2	P	11.958	0.0	0.0	0.000	0.1
3	W	0.000	688.0	688.0	23.917	0.0
3	P	11.958	0.0	0.0	0.000	0.1
4	W	0.000	688.0	688.0	23.917	0.0
4	P	11.958	0.0	0.0	0.000	0.1
5	W	0.000	688.0	688.0	23.917	0.0
5	P	11.958	0.0	0.0	0.000	0.1
6	W	0.000	688.0	688.0	23.917	0.0
6	P	11.958	0.0	0.0	0.000	0.1
7	W	0.000	688.0	688.0	23.917	0.0
7	P	11.958	0.0	0.0	0.000	0.1
8	W	0.000	688.0	688.0	23.917	0.0
8	P	11.958	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
 Check Point I. D. 1.000

Dead Load Moment Superimposed Dead Load 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1T	0.00 R	0.00	0.00	0.00	0.0	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1T	999.00	999.00	999.00	999.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.1	65.5
OPER	151.3	-123.5	109.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.08	31.19	-1.60	24.00	-2.12	24.40	-1.63	18.77
OPER	5C1T	-2.10	25.07	-1.62	19.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	34.92	2.10	HS 42.02	75.6
5C1T	58.74	4.36	0.00	348.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.000Dead 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.00
OPER	5C1T	0.00 R	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.00

Serviceability

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	999.0
5C1T	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.100

	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. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.100

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.1	152.2	-189.3
OPER	300.6C	-268.7	268.7	-300.6C	285.7	-283.6	253.7	-315.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39			
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00		
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00			
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.76	32.75	2.45	36.44	HS 49.06	88.3
5C1T	5.62	56.40	4.99	62.76	0.00	399.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.6
OPER	151.3	-121.7	111.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.01	25.95	-2.31	19.96	-3.12	20.89	-2.40	16.07
OPER	5C1T	-3.55	21.24	-2.73	16.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.43	2.57	HS 51.35	92.4
5C1T	34.28	5.23	0.00	418.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.100

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.7

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber +bend	top fiber -bend	bottom fi +bend	bottom fi -bend
INV. 176.6	173.6	-161.7	173.6	-161.7	158.7	-176.6	158.7	-
OPER 294.3	279.4	-279.4	279.4	-279.4	264.5	-294.3	264.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	62.06 L	47.74	-11.61	0.0	39.19	30.15	2.39	
		-5.20 R	-4.00	56.70	0.0	-3.96	-3.04	33.48	0.00
OPER	5C1T	50.81 R	39.08	105.39	0.0	0.00	0.00	0.00	
		-5.03 R	-3.87	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	2.56	33.99	2.56	33.99	HS 51.14	92.1
5C1T	5.21	58.53	5.21	58.53	0.00	416.5

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.200

Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	165.0	-176.5	145.9	-195.7
OPER	300.6C	-268.7	268.7	-300.6C	275.1	-294.2	243.1	-326.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78			
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00		
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00			
		-10.06 R	-7.74	132.48	0.0	0.00	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	1.64	16.99	1.45	18.83	HS 29.04	52.3
5C1T	3.28	29.25	2.90	32.44	0.00	231.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 3.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-5.98	21.00	-4.60	16.15	-5.74	17.56	-4.42	13.51
OPER	5C1T	-5.41	17.54	-4.16	13.49	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	12.04	3.22	HS 64.47	116.0	
5C1T	22.15	6.43	0.00	514.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.200

Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 183.0	177.9	-157.4	177.9	-157.4	152.3	-183.0	152.3	-
OPER 305.0	279.4	-279.4	279.4	-279.4	253.8	-305.0	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	100.45 L	77.27	-9.22	0.0	66.77	51.36	4.78	
		-10.39 R	-7.99	56.70	0.0	-7.91	-6.09	33.48	0.00
OPER	5C1T	83.90 R	64.54	107.78	0.0	0.00	0.00	0.00	
		-10.06 R	-7.74	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.52	17.61	1.52	17.61	HS 30.32	54.6
5C1T	3.03	30.32	3.03	30.32	0.00	242.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.300

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	161.2	-180.3	142.1	-199.5
OPER	300.6C	-268.7	268.7	-300.6C	268.7	-300.6	236.8	-332.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18			
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00		
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00			
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.37	11.57	1.21	HS 24.10	43.4
5C1T	2.67	19.92	2.35	0.00	188.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.1	0.0	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-8.87	16.43	-6.82	12.64	-8.45	14.43	-6.50	11.10
OPER	5C1T	-8.18	14.03	-6.30	10.79	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.99	4.19	HS 83.71	150.7	
5C1T	14.43	8.17	0.00	653.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.300

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 186.8	180.4	-154.9	180.4	-154.9	148.5	-186.8	148.5	-
OPER 311.3	279.4	-279.4	279.4	-279.4	247.5	-311.3	247.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.89 L	90.68	-6.82	0.0	84.85	65.27	7.18	
		-15.59 R	-11.99	56.70	0.0	-11.87	-9.13	33.48	0.00
OPER	5C1T	100.64 R	77.41	110.18	0.0	0.00	0.00	0.00	
		-15.09 R	-11.60	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.26	11.98	1.26	11.98	HS 25.19	45.3
5C1T	2.46	20.64	2.46	20.64	0.00	196.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.400

Dead Load Moment Superimposed Dead Load Moment
2.8 31.2

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	160.0	-181.6	140.8	-200.8
OPER	300.6C	-268.7	268.7	-300.6C	266.7	-302.6	234.7	-334.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57			
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00		
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00			
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.36	8.74	1.20	9.66	HS 23.91	43.0
5C1T	2.52	15.05	2.22	16.64	0.00	177.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.400

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	69.8
OPER	151.3	-116.3	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-11.85	12.31	-9.12	9.47	-11.20	11.52	-8.62	8.86
OPER	5C1T	-11.06	10.81	-8.51	8.32	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.89	5.67	HS 113.45	204.2
5C1T	10.52	10.77	0.00	841.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.400

Dead Load Moment 2.8
Superimposed Dead Load Moment 31.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.0	181.2	-154.1	181.2	-154.1	147.3	-188.0	147.3	-
OPER 313.3	279.4	-279.4	279.4	-279.4	245.5	-313.3	245.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.79 L	90.61	-4.43	0.0	92.13	70.87	9.57	
		-20.78 R	-15.99	56.70	0.0	-15.83	-12.17	33.48	0.00
OPER	5C1T	105.90 R	81.46	108.57	0.0	0.00	0.00	0.00	
		-20.11 R	-15.47	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.25	9.05	1.25	9.05	HS 25.01	45.0
5C1T	2.32	15.58	2.32	15.58	0.00	185.4

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	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. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.500

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.1

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	161.4	-180.2	142.2	-199.4
OPER	300.6C	-268.7	268.7	-300.6C	268.9	-300.4	236.9	-332.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	113.58 L	87.37	-16.04	0.0	91.16	70.12	11.96			
		-25.98 R	-19.98	56.70	0.0	-19.78	-15.22	33.48	0.00		
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00	0.00	0.00			
		-25.14 R	-19.34	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.42	6.94	1.25	7.68	HS 25.03	45.1
5C1T	2.59	11.95	2.28	13.22	0.00	182.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 1.500
 HS20 5C1T
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -1.7 0.1

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/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-15.37	9.50	-11.82	7.31	-13.95	8.87	-10.73	6.82
OPER	5C1T	-13.29	8.43	-10.23	6.49	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.47	7.47	HS 89.44	161.0	
5C1T	8.62	14.02	0.00	689.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.500Dead Load Moment 2.6
Superimposed Dead Load Moment 29.1

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 186.7	180.3	-155.0	180.3	-155.0	148.6	-186.7	148.6	-
OPER 311.1	279.4	-279.4	279.4	-279.4	247.7	-311.1	247.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	113.58 L	87.37	-16.04	0.0	91.16
		-25.98 R	-19.98	56.70	0.0	-19.78
OPER	5C1T	103.89 L	79.92	-39.04	0.0	0.00
		-25.14 R	-19.34	132.48	0.0	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	
HS20	1.31	7.18	1.31	7.18	47.1
5C1T	2.38	12.37	2.38	12.37	190.7

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.69	28.67	28.67	1.699	999999.000	91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.600

Dead Load Moment 2.0
Superimposed Dead Load Moment 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.	180.4C	-161.2	161.2	-180.4C	165.5	-176.1	146.3	-195.3
OPER	300.6C	-268.7	268.7	-300.6C	275.8	-293.5	243.8	-325.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35			
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00		
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00			
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.60	5.65	1.41	6.26	HS 28.30	50.9
5C1T	2.88	9.73	2.55	10.79	0.00	204.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-67.6	72.1
OPER	151.3	-112.6	120.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-18.34	6.62	-14.11	5.09	-16.67	6.50	-12.83	5.00
OPER	5C1T	-15.87	6.09	-12.21	4.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.68	10.88	HS 73.67	132.6	
5C1T	7.09	19.74	0.00	567.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.600

Dead Load Moment 2.0
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 182.6	177.6	-157.7	177.6	-157.7	152.7	-182.6	152.7	-
OPER 304.3	279.4	-279.4	279.4	-279.4	254.5	-304.3	254.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	103.37 L	79.51	-13.65	0.0	81.03	62.33	14.35	
		-31.18 R	-23.98	56.70	0.0	-23.74	-18.26	33.48	0.00
OPER	5C1T	95.59 L	73.53	-36.65	0.0	0.00	0.00	0.00	
		-30.17 R	-23.21	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.48	5.86	1.48	5.86	HS 29.55	53.2
5C1T	2.66	10.09	2.66	10.09	0.00	213.0

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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.700

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.6

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	172.1	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	286.9	-282.4	254.9	-314.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74			
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48		81.32	
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00			
		-35.20 R	-27.08	132.48	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.94	4.66	1.72	HS 34.42	62.0
5C1T	3.73	8.02	3.32	0.00	265.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.700

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/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-22.80	2.98	-17.54	2.29	-19.32	4.42	-14.86	3.40
OPER	5C1T	-18.62	4.09	-14.33	3.15	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.92	16.54	HS 58.32	105.0	
5C1T	5.95	29.81	0.00	476.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.700

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.9	173.1	-162.1	173.1	-162.1	159.4	-175.9	159.4	-
OPER 293.1	279.4	-279.4	279.4	-279.4	265.7	-293.1	265.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.88 L	68.37	-11.26	0.0	64.70	49.77	16.74	
		-36.37 R	-27.98	56.70	0.0	-28.96	-22.28	33.48	81.32
OPER	5C1T	76.85 L	59.12	-34.26	0.0	0.00	0.00	0.00	
		-35.20 R	-27.08	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	4.84	1.79	4.84	HS 35.87	64.6
5C1T	3.46	8.33	3.46	8.33	0.00	276.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.4	-298.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13			
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32		
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00			
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.27	3.85	2.93	4.32	HS 58.52 105.3
5C1T	5.71	6.64	5.10	7.43	0.00 408.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.0	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-27.72	1.03	-21.32	0.79	-21.85	2.66	-16.81	2.05
OPER	5C1T	-21.45	2.34	-16.50	1.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.36	27.89	HS 47.19	84.9
5C1T	5.08	52.98	0.00	406.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.800

Dead Load Moment Superimposed Dead Load Moment

-0.2 -1.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 166.6	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	55.44 L	42.64	-8.87	0.0	42.24	32.49	19.13	
		-41.57 R	-31.98	56.70	0.0	-33.16	-25.51	33.48	81.32
OPER	5C1T	52.97 R	40.74	153.13	0.0	0.00	0.00	0.00	
		-40.23 R	-30.94	132.48	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	3.04	4.01	3.04	4.01	HS 60.85	109.5
5C1T	5.31	6.90	5.31	6.90	0.00	424.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.69	28.67	28.67	1.699	999999.000	91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.900

Dead Load Superimposed Dead Load
Moment Moment
-1.8 -19.6

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	193.2	-148.3	174.0	-167.5
OPER	300.6C	-268.7	268.7	-300.6C	322.1	-247.2	290.1	-279.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53			
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48		9.57	
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00			
		-46.28 L	-35.60	-13.52	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.39	2.73	8.45 3.09	HS 54.63	98.3
5C1T	13.14	5.34	11.84 6.03	0.00	427.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.8	-8.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-64.3	75.3
OPER	151.3	-107.2	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.21	0.56	-24.77	0.43	-24.21	1.24	-18.62	0.95
OPER	5C1T	-24.44	0.88	-18.80	0.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.00	60.83	HS 39.95	71.9
5C1T	4.39	143.23	0.00	351.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 1.900

Dead Load Moment Superimposed Dead Load Moment
-1.8 -19.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.8	159.1	-176.2	159.1	-176.2	180.5	-154.8	180.5	-
OPER 258.0	279.4	-279.4	279.4	-279.4	300.8	-258.0	300.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	10.48 R	8.06	85.40	0.0	20.59	15.84	21.53	
		-53.85 R	-41.42	42.70	0.0	-54.31	-41.78	33.48	9.57
OPER	5C1T	24.50 R	18.85	155.53	0.0	0.00	0.00	0.00	
		-46.28 L	-35.60	-13.52	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.77	2.85	8.77	2.85	HS 57.00	102.6
5C1T	12.28	5.57	12.28	5.57	0.00	445.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40			
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35		33.48	
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00			
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.91	1.33	13.54	1.52	HS 26.55 47.8
5C1T	29.60	3.06	26.87	3.49	0.00 244.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 2.000

HS20 5C1T

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	-0.9	-8.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-63.3	64.1
OPER	151.3	-105.4	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	-32.21	33.50	-24.77	25.77	-24.21	26.13	-18.62	20.10
OPER	5C1T	-24.44	26.51	-18.80	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.75	1.91	HS 34.96	62.9
5C1T	3.89	4.03	0.00	310.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -41.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	14.00	1.39	14.00	1.39	HS 27.82	50.1
5C1T	27.79	3.20	27.79	3.20	0.00	256.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load w/imp.	Load Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane Live Load w/imp.	Load Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.91	1.33	13.54	1.52	26.55
5C1T	29.60	3.06	26.87	3.49	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	0.8	-10.0	8.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.3	64.1
OPER	151.3	-105.4	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	-36.19	33.50	-27.84	25.77	-26.36	26.13	-20.28	20.10
OPER	5C1T	-27.13	26.51	-20.87	20.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.75	1.91	HS 34.96	62.9
5C1T	3.89	4.03	0.00	310.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -41.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 R	10.71	80.62	0.0	10.60	8.15	57.40	
		-100.91 L	-77.62	3.09	0.0	-90.69	-69.76	14.35	33.48
OPER	5C1T	11.69 R	8.99	193.79	0.0	0.00	0.00	0.00	
		-73.05 R	-56.19	28.74	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.00	1.39	14.00	1.39	HS 27.82	50.1
5C1T	27.79	3.20	27.79	3.20	0.00	256.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.93	28.67	28.67	1.699	999999.000	104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.100

Dead Load Superimposed Dead Load
Moment Moment
-2.1 -22.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	195.2	-146.3	176.0	-165.5
OPER	300.6C	-268.7	268.7	-300.6C	325.4	-243.9	293.4	-275.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31			
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35		38.27	
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00			
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.13	2.16	8.23	2.45	HS 43.25	77.9
5C1T	15.18	4.55	13.69	5.15	0.00	364.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 2.100
 HS20 5C1T

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.6	0.0 7.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.5	65.2
OPER	151.3	-124.1	108.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-2.79	29.37	-2.15	22.59	-2.89	23.54	-2.22	18.11
OPER	5C1T	-3.00	23.58	-2.31	18.14	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.79	2.22	HS 44.38	79.9
5C1T	41.37	4.61	0.00	368.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.100

Dead Load Moment Superimposed Dead Load Moment
-2.1 -22.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.8	157.7	-177.5	157.7	-177.5	182.5	-152.8	182.5	-
OPER 254.7	279.4	-279.4	279.4	-279.4	304.1	-254.7	304.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	19.54 R	15.03	54.31	0.0	21.39	16.46	26.31	
		-67.67 R	-52.06	33.13	0.0	-56.20	-43.23	14.35	38.27
OPER	5C1T	21.43 R	16.48	164.31	0.0	0.00	0.00	0.00	
		-53.56 L	-41.20	-2.43	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	8.53	2.26	8.53	2.26	HS 45.16	81.3
5C1T	14.19	4.76	14.19	4.76	0.00	380.4

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.93	28.67	28.67	1.699	999999.000	104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-0.7 -7.6

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	185.4	-156.2	166.2	-175.4
OPER	300.6C	-268.7	268.7	-300.6C	309.0	-260.3	277.0	-292.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70			
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35		38.27	
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00			
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.12	2.79	2.80	3.13	HS 55.85
5C1T	6.63	5.64	5.94	6.34	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.200Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.5 0.0 5.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -73.4 66.2
OPER 151.3 -122.3 110.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.79	24.68	-2.15	18.98	-4.29	20.73	-3.30	15.95
OPER	5C1T	-4.56	20.19	-3.50	15.53	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.10	2.68	HS 53.69	96.6
5C1T	26.85	5.47	0.00	437.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-0.7 -7.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.6	164.3	-171.0	164.3	-171.0	172.6	-162.6	172.6	-
OPER 271.1	279.4	-279.4	279.4	-279.4	287.7	-271.1	287.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	59.45 R	45.73	56.70	0.0	40.91	31.47	28.70	
		-55.93 L	-43.03	-8.87	0.0	-38.16	-29.36	14.35	38.27
OPER	5C1T	46.63 R	35.87	131.70	0.0	0.00	0.00	0.00	
		-46.11 L	-35.47	2.35	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.90	2.91	2.90	2.91	HS 58.08	104.5
5C1T	6.17	5.88	6.17	5.88	0.00	470.2

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	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. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.93	28.67	28.67	1.699	999999.000	104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.300

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.5

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	178.1	-163.4	158.9	-182.6
OPER	300.6C	-268.7	268.7	-300.6C	296.9	-272.4	264.9	-304.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 R	64.45	59.09	0.0	60.87	46.83	31.09			
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85	14.35		0.00	
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00	0.00			
		-42.29 L	-32.53	3.13	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	3.52	1.90	3.93	HS 37.94	68.3
5C1T	4.26	6.44	3.80	7.20	0.00	303.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.300

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	-5.15	20.51	-3.96	15.77	-6.59	17.81	-5.07	13.70
OPER	5C1T	-6.39	16.67	-4.91	12.82	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.98	3.28	HS 65.67	118.2
5C1T	18.87	6.73	0.00	538.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.300

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 169.9	169.1	-166.1	169.1	-166.1	165.4	-169.9	165.4	-
OPER 283.2	279.4	-279.4	279.4	-279.4	275.6	-283.2	275.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	83.79 R	64.45	59.09	0.0	60.87	46.83
		-46.43 L	-35.72	-8.87	0.0	-33.60	-25.85
OPER	5C1T	69.73 R	53.64	134.09	0.0	0.00	0.00
		-42.29 L	-32.53	3.13	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.97	3.66	1.97	3.66
5C1T	3.95	6.70	3.95	6.70

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.400

Dead Load Moment 0.9
Superimposed Dead Load Moment 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.	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	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48			
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35		0.00	
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00			
		-39.88 L	-30.68	-36.65	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	1.87	4.55	1.66	5.07	59.9
5C1T	3.56	7.03	3.17	7.83	253.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.2

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8		-71.2 68.4
OPER	151.3		-118.7 114.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.55	17.12	-7.34	13.17	-9.16	14.86	-7.04	11.43
OPER	5C1T	-8.47	13.97	-6.51	10.75	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.46	3.99	HS 79.90	143.8	
5C1T	14.03	8.16	0.00	652.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.400Dead Load Moment 0.9
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	92.63 R	71.26	61.48	0.0	72.64	55.87	33.48	
		-36.93 L	-28.41	-8.87	0.0	-29.05	-22.34	14.35	0.00
OPER	5C1T	81.12 R	62.40	132.48	0.0	0.00	0.00	0.00	
		-39.88 L	-30.68	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	4.73	1.74	4.73	HS 34.70	62.5
5C1T	3.30	7.30	3.30	7.30	0.00	264.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 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	171.3	-170.2	152.1	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88			
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35		0.00	
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00			
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.93	6.21	1.72	6.91	HS 34.31	61.8
5C1T	3.35	7.53	2.98	8.38	0.00	238.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.5

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-70.2 69.5
OPER	151.3	-116.9 115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.52	13.48	-10.40	10.37	-11.93	11.97	-9.17	9.21
OPER	5C1T	-10.75	11.58	-8.27	8.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.19	5.15	HS 103.06	185.5
5C1T	10.88	10.00	0.00	799.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	88.69 L	68.22	21.88	0.0	77.29	59.45	35.88	
		-27.43 L	-21.10	-8.87	0.0	-24.49	-18.84	14.35	0.00
OPER	5C1T	85.16 L	65.51	-15.12	0.0	0.00	0.00	0.00	
		-37.69 L	-28.99	-36.65	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	6.44	1.79	6.44	HS 35.76	64.4
5C1T	3.10	7.81	3.10	7.81	0.00	248.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.79	28.67	28.67	1.699	999999.000	97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.600

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.6	152.8	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.6	-282.7	254.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27			
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00		
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00			
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.09	1.68	6.78	HS 33.60	60.5
5C1T	3.48	7.67	3.10	8.54	0.00	247.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.0	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.02	9.38	-13.09	7.21	-14.82	9.23	-11.40	7.10
OPER	5C1T	-13.22	9.45	-10.17	7.27	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.53	HS 81.12	146.0	
5C1T	8.70	12.45	0.00	696.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.600

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.0	173.2	-162.0	159.2	-176.0	159.2	-
OPER 293.4	279.4	-279.4	279.4	-279.4	265.4	-293.4	265.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	90.93 L	69.95	10.27	0.0	72.82	56.01	38.27	
		-27.85 R	-21.42	80.62	0.0	-25.56	-19.66	57.40	0.00
OPER	5C1T	82.25 L	63.27	-12.73	0.0	0.00	0.00	0.00	
		-36.85 R	-28.35	154.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.75	6.32	1.75	6.32	HS 35.02	63.0
5C1T	3.23	7.96	3.23	7.96	0.00	258.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.79	28.67	28.67	1.699	999999.000	97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
 Check Point I. D. 2.700

Dead Load Moment 0.7
 Superimposed Dead Load Moment 8.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.2	-166.4	156.0	-185.6
OPER	300.6C	-268.7	268.7	-300.6C	292.0	-277.3	260.0	-309.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66			
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00		
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00			
		-37.96 R	-29.20	155.62	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.78	1.91	5.33	HS 38.28	68.9
5C1T	4.09	7.30	3.64	8.15	0.00	291.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-2.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.9	71.7
OPER	151.3	-113.2	119.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.39	4.89	-15.68	3.76	-17.75	6.71	-13.65	5.16
OPER	5C1T	-16.16	7.39	-12.43	5.68	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.33	10.69	HS 66.64	120.0	
5C1T	7.01	16.18	0.00	560.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 288.0	279.4	-279.4	279.4	-279.4	270.8	-288.0	270.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.52 L	62.71	12.66	0.0	61.38	47.22	40.66	
		-34.81 R	-26.77	80.62	0.0	-28.55	-21.96	57.40	0.00
OPER	5C1T	71.38 R	54.91	174.66	0.0	0.00	0.00	0.00	
		-37.96 R	-29.20	155.62	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.97	1.99	4.97	HS 39.86	71.7
5C1T	3.79	7.59	3.79	7.59	0.00	303.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.800

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	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05			
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23		
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00			
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	57.36
5C1T	5.65	6.70	5.05	7.50	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.9	72.8
OPER	151.3	-111.4	121.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.99	3.79	-19.22	2.92	-20.63	4.48	-15.87	3.45
OPER	5C1T	-19.38	5.47	-14.91	4.20	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.68	16.25	HS 53.52	96.3	
5C1T	5.75	22.19	0.00	459.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.800

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.42 L	43.40	15.05	0.0	42.82	32.94	43.05	
		-41.77 R	-32.13	80.62	0.0	-33.28	-25.60	57.40	105.23
OPER	5C1T	53.40 R	41.08	177.05	0.0	0.00	0.00	0.00	
		-39.94 R	-30.72	156.40	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.64	107.4
5C1T	5.25	6.97	5.25	6.97	0.00	420.1

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	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. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.900

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -13.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.4	-152.2	170.2	-171.4
OPER	300.6C	-268.7	268.7	-300.6C	315.6	-253.7	283.6	-285.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44			
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40		35.88	
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00			
		-43.80 R	-33.69	158.79	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.85	2.79	7.05	3.14	HS 55.75 100.4
5C1T	11.13	5.79	10.01	6.52	0.00 463.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8		-65.8 73.9
OPER	151.3		-109.6 123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.62	3.97	-22.79	3.06	-23.37	3.74	-17.97	2.88
OPER	5C1T	-22.61	3.75	-17.39	2.88	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating	Factor	Rating	Load
	(-)	(+)	Value	Capacity
				(tons)
HS20	2.22	18.59	HS 44.41	79.9
5C1T	4.85	32.85	0.00	387.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 2.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.7

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 158.6	161.6	-173.6	161.6	-173.6	176.6	-158.6	176.6	-
OPER 264.4	279.4	-279.4	279.4	-279.4	294.4	-264.4	294.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.01 L	12.31	17.44	0.0	24.13	18.56	45.44	
		-54.60 L	-42.00	38.62	0.0	-50.59	-38.91	57.40	35.88
OPER	5C1T	28.35 R	21.81	92.44	0.0	0.00	0.00	0.00	
		-43.80 R	-33.69	158.79	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	7.32	2.91	7.32	2.91	HS 58.12	104.6
5C1T	10.39	6.04	10.39	6.04	0.00	483.0

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	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. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load Superimposed Dead Load
Moment Moment
-2.8 -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08	L	15.45	-8.87	0.0	17.83	13.72	14.35		
		-95.40	L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40	
OPER	5C1T	16.07	L	12.36	-122.04	0.0	0.00	0.00	0.00		
		-59.27	L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.98	1.48	9.02	1.68	HS 29.61	53.3
5C1T	20.78	3.97	18.79	4.51	0.00	317.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.5
OPER	151.3	-107.8	107.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.62	33.80	-22.79	26.00	-23.37	25.99	-17.97	20.00
OPER	5C1T	-22.61	25.95	-17.39	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.91	HS 38.10	68.6
5C1T	4.20	4.14	0.00	331.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	9.34	1.55	9.34	1.55	HS 30.96	55.7
5C1T	19.46	4.15	19.46	4.15	0.00	332.2

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	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. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08	L	15.45	-8.87	0.0	17.83	13.72	14.35		
		-95.40	L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40	
OPER	5C1T	16.07	L	12.36	-122.04	0.0	0.00	0.00	0.00		
		-59.27	L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.98	1.48	9.02	1.68	HS 29.61	53.3
5C1T	20.78	3.97	18.79	4.51	0.00	317.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-7.8	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.5
OPER	151.3	-107.8	107.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.97	33.80	-26.13	26.00	-25.86	25.99	-19.89	20.00
OPER	5C1T	-25.68	25.95	-19.76	19.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.91	HS 38.10	68.6
5C1T	4.20	4.14	0.00	331.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	20.08 L	15.45	-8.87	0.0	17.83	13.72	14.35	
		-95.40 L	-73.38	27.01	0.0	-84.60	-65.08	38.27	57.40
OPER	5C1T	16.07 L	12.36	-122.04	0.0	0.00	0.00	0.00	
		-59.27 L	-45.60	43.01	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	9.34	1.55	9.34	1.55	HS 30.96	55.7
5C1T	19.46	4.15	19.46	4.15	0.00	332.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.100

Dead Load Superimposed Dead Load
Moment Moment
-1.2 -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.	180.4C	-161.2	161.2	-180.4C	188.8	-152.7	169.7	-171.9
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.5	282.8	-286.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23			
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27		59.79	
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00			
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.58	2.75	6.81	3.09	HS 54.94	98.9
5C1T	10.68	6.01	9.60	6.76	0.00	480.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.100

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	-123.5	109.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.84	29.42	-2.19	22.63	-3.20	23.47	-2.46	18.05
OPER	5C1T	-3.18	22.99	-2.45	17.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.17	2.23	HS 44.57	80.2
5C1T	38.81	4.75	0.00	380.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -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. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.3	279.4	-279.4	279.4	-279.4	293.5	-265.3	293.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.56 R	12.74	78.23	0.0	24.91	19.16	50.23	
		-55.60 R	-42.77	57.05	0.0	-50.39	-38.76	38.27	59.79
OPER	5C1T	29.46 L	22.66	-83.77	0.0	0.00	0.00	0.00	
		-42.36 L	-32.58	23.88	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.07	2.86	7.07	2.86	HS 57.26	103.1
5C1T	9.96	6.26	9.96	6.26	0.00	501.0

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
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. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.79	28.67	28.67	1.699	999999.000	96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.200

Dead Load Moment 0.0
Superimposed Dead Load Moment 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	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62			
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36		
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00			
		-38.13 L	-29.33	-60.73	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.17	3.84	2.84	4.29	HS 56.74	102.1
5C1T	5.48	7.07	4.89	7.90	0.00	391.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.6
OPER	151.3	-121.7	111.1

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	-2.84	24.77	-2.19	19.05	-4.45	20.70	-3.42	15.92
OPER	5C1T	-4.73	19.81	-3.64	15.24	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.42	2.69	HS 53.81	96.9
5C1T	25.70	5.61	0.00	448.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.200

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.3	167.9	-167.3	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	56.67 R	43.59	80.62	0.0	43.00	33.08	52.62	
		-42.15 L	-32.42	15.05	0.0	-31.75	-24.42	38.27	69.36
OPER	5C1T	54.76 L	42.12	-81.38	0.0	0.00	0.00	0.00	
		-38.13 L	-29.33	-60.73	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 59.01	106.2
5C1T	5.09	7.35	5.09	7.35	0.00	407.1

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.300

Dead Load Moment Superimposed Dead Load Moment
0.9 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	173.6	-168.0	154.4	-187.2
OPER	300.6C	-268.7	268.7	-300.6C	289.3	-279.9	257.4	-311.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01			
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00		
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00			
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	4.80	1.89	5.35	HS 37.86	68.2
5C1T	3.96	7.82	3.52	8.71	0.00	281.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-4.96	20.31	-3.81	15.63	-6.71	17.79	-5.16	13.69
OPER	5C1T	-6.65	16.57	-5.12	12.75	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.72	3.33	HS 66.66	120.0
5C1T	18.02	6.81	0.00	544.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.300

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.4	172.2	-163.1	172.2	-163.1	160.9	-174.4	160.9	-
OPER 290.7	279.4	-279.4	279.4	-279.4	268.1	-290.7	268.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.57 R	62.75	83.01	0.0	62.17	47.83	55.01	
		-34.99 L	-26.92	15.05	0.0	-27.90	-21.46	38.27	0.00
OPER	5C1T	73.11 L	56.24	8.01	0.0	0.00	0.00	0.00	
		-35.82 L	-27.55	27.05	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.97	4.99	1.97	4.99	HS 39.44	71.0
5C1T	3.67	8.11	3.67	8.11	0.00	293.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400

	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
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. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 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	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40			
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27		0.00	
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00			
		-34.21 L	-26.32	27.93	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	1.87	6.17	1.65	HS 33.08	59.5
5C1T	3.32	8.36	2.94	0.00	235.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.6

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -70.9 68.8
OPER 151.3 -118.1 114.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.38	16.93	-7.22	13.02	-9.27	14.84	-7.13	11.41
OPER	5C1T	-8.87	13.57	-6.82	10.44	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.55	4.06	HS 81.27	146.3
5C1T	13.32	8.45	0.00	675.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.400

Dead Load Moment Superimposed Dead Load Moment
1.4 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	91.09 R	70.07	85.40	0.0	73.64	56.65	57.40	
		-27.83 L	-21.41	15.05	0.0	-24.52	-18.86	38.27	0.00
OPER	5C1T	85.31 R	65.62	108.40	0.0	0.00	0.00	0.00	
		-34.21 L	-26.32	27.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	6.40	1.73	6.40	HS 34.49	62.1
5C1T	3.07	8.68	3.07	8.68	0.00	245.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500

	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
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. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79			
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00		
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	0.00	0.00			
		-34.26 R	-26.35	177.93	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.92	8.18	1.70	9.09	HS 34.02	61.2
5C1T	3.18	8.41	2.82	9.35	0.00	225.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.500

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	-13.39	13.39	-10.30	10.30	-12.04	11.93	-9.26	9.18
OPER	5C1T	-11.30	11.10	-8.69	8.54	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.21	5.22	HS 104.21	187.6
5C1T	10.29	10.49	0.00	823.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.4	-159.8	175.4	-159.8	155.9	-179.4	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	87.89 L	67.61	45.79	0.0	78.07	60.06	59.79	
		-20.67 L	-15.90	15.05	0.0	-21.13	-16.25	38.27	0.00
OPER	5C1T	88.32 R	67.94	110.79	0.0	0.00	0.00	0.00	
		-34.26 R	-26.35	177.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.77	8.49	1.77	8.49	HS 35.48	63.9
5C1T	2.94	8.73	2.94	8.73	0.00	235.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600

	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. S03
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.600

Dead Load Moment Superimposed Dead Load Moment

1.4 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	170.3	-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.	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	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18			
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32	0.00		
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00			
		-35.16 R	-27.04	177.93	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	1.87	6.21	1.66	6.90	HS 33.21	59.8
5C1T	3.38	8.12	3.00	9.03	0.00	239.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.600

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	118.4

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	-16.92	9.37	-13.02	7.21	-14.95	9.16	-11.50	7.05
OPER	5C1T	-13.83	8.74	-10.64	6.72	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.58	HS 81.11	146.0	
5C1T	8.27	13.55	0.00	661.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 15.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	90.97 L	69.98	34.18	0.0	73.39	56.45	62.18
		-27.61 R	-21.24	104.53	0.0	-24.53	-18.87	81.32
OPER	5C1T	84.00 L	64.62	11.18	0.0	0.00	0.00	0.00
		-35.16 R	-27.04	177.93	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	6.44	1.73	6.44	HS 34.63	62.3
5C1T	3.12	8.43	3.12	8.43	0.00	250.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.4	-167.2	155.2	-186.4
OPER	300.6C	-268.7	268.7	-300.6C	290.7	-278.6	258.7	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58			
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00		
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00			
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.82	1.91	5.37	HS 38.13	68.6
5C1T	4.03	7.46	3.58	8.31	0.00	286.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.700

Dead Load	Superimposed Dead Load
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	-20.31	4.94	-15.62	3.80	-17.90	6.61	-13.77	5.08
OPER	5C1T	-16.79	6.57	-12.92	5.06	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.33	10.91	HS 66.53	119.8	
5C1T	6.70	18.28	0.00	536.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.6	171.6	-163.7	171.6	-163.7	161.7	-173.6	161.7	-
OPER 289.4	279.4	-279.4	279.4	-279.4	269.4	-289.4	269.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	81.41 L	62.62	36.58	0.0	61.68	47.45	64.58	
		-34.69 R	-26.69	104.53	0.0	-28.07	-21.59	81.32	0.00
OPER	5C1T	72.21 R	55.54	111.58	0.0	0.00	0.00	0.00	
		-37.37 R	-28.74	179.53	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	5.00	1.99	5.00	HS 39.72	71.5
5C1T	3.73	7.74	3.73	7.74	0.00	298.5

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.800

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	161.9	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97			
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15		
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00			
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.38
5C1T	5.66	6.68	5.06	7.48	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.800

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	-24.79	2.86	-19.07	2.20	-20.80	4.35	-16.00	3.35
OPER	5C1T	-20.08	4.67	-15.45	3.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.68	16.82	HS 53.63	96.5
5C1T	5.52	26.13	0.00	441.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.800

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	38.97	0.0	42.78	32.90	66.97	
		-41.78 R	-32.14	104.53	0.0	-33.38	-25.67	81.32	129.15
OPER	5C1T	53.38 R	41.06	200.97	0.0	0.00	0.00	0.00	
		-40.02 R	-30.79	180.32	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.98	3.99	2.98	3.99	HS 59.66	107.4
5C1T	5.26	6.95	5.26	6.95	0.00	420.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900

	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. S03
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.4	-15.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.1	171.3	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00	
		-44.23 R	-34.02	181.93	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.04	2.77	7.23	3.12	HS 55.30	99.5
5C1T	11.51	5.70	10.35	6.42	0.00	455.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-65.4	74.3
OPER	151.3	-109.0	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	2.99	-22.64	2.30	-23.57	3.15	-18.13	2.42
OPER	5C1T	-23.31	3.07	-17.93	2.36	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.22	23.59	HS 44.43	80.0	
5C1T	4.68	40.27	0.00	374.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 3.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -15.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	160.9	-174.3	160.9	-174.3	177.7	-157.6	177.7	-
OPER 262.6	279.4	-279.4	279.4	-279.4	296.2	-262.6	296.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.30 L	12.54	41.36	0.0	23.68	18.22	69.36	
		-54.66 L	-42.05	62.53	0.0	-51.04	-39.26	81.32	59.79
OPER	5C1T	27.59 R	21.22	203.36	0.0	0.00	0.00	0.00	
		-44.23 R	-34.02	181.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.50	2.88	7.50	2.88	HS 57.66	103.8
5C1T	10.74	5.94	10.74	5.94	0.00	475.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	13.10	1.47	11.86	1.67	HS 29.32	52.8
5C1T	26.79	3.89	24.25	4.43	0.00	311.2

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 4.000
 HS20 5C1T

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	-64.3	64.4
OPER	151.3	-107.2	107.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.44	33.80	-22.64	26.00	-23.57	26.06	-18.13	20.04
OPER	5C1T	-23.31	26.09	-17.93	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.90	HS 38.05	68.5
5C1T	4.08	4.11	0.00	326.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.28	1.53	12.28	1.53	HS 30.67	55.2
5C1T	25.10	4.07	25.10	4.07	0.00	325.6

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.208

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27			
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18		81.32	
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00			
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	13.10	1.47	11.86	1.67	HS 29.32	52.8
5C1T	26.79	3.89	24.25	4.43	0.00	311.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-8.4	8.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.3	64.4
OPER	151.3	-107.2	107.3

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	-33.81	33.80	-26.01	26.00	-26.09	26.06	-20.07	20.04
OPER	5C1T	-26.30	26.09	-20.23	20.07	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.90	HS 38.05	68.5
5C1T	4.08	4.11	0.00	326.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 L	11.64	15.05	0.0	15.44	11.88	38.27	
		-95.00 L	-73.08	50.93	0.0	-85.49	-65.76	62.18	81.32
OPER	5C1T	12.59 R	9.68	241.63	0.0	0.00	0.00	0.00	
		-59.67 R	-45.90	76.58	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.28	1.53	12.28	1.53	HS 30.67	55.2
5C1T	25.10	4.07	25.10	4.07	0.00	325.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.315

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		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
 Check Point I. D. 4.100

Dead Load Superimposed Dead Load
 Moment Moment
 -1.4 -15.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14			
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18		83.71	
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00			
		-45.02 L	-34.63	-38.42	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.94	2.76	7.14 3.11	HS 55.18	99.3
5C1T	11.75	5.59	10.57 6.30	0.00	447.2

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 4.100
 HS20 5C1T

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-2.85	29.42	-2.19	22.63	-3.15	23.54	-2.42	18.10
OPER	5C1T	-3.04	23.11	-2.34	17.77	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.58	2.22	HS 44.49	80.1
5C1T	40.68	4.72	0.00	377.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.100

Dead Load Moment Superimposed Dead Load Moment
-1.4 -15.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.34 R	12.57	102.14	0.0	24.01	18.47	74.14	
		-54.73 R	-42.10	80.97	0.0	-51.14	-39.34	62.18	83.71
OPER	5C1T	27.03 L	20.79	-59.86	0.0	0.00	0.00	0.00	
		-45.02 L	-34.63	-38.42	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	7.41	2.88	7.41	2.88	HS 57.54	103.6
5C1T	10.97	5.83	10.97	5.83	0.00	466.3

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 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. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.699
			999999.000
			100.315

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		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.4	-298.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53			
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18		14.35	
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00			
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.45	103.4
5C1T	5.71	6.56	5.11	7.34	0.00	408.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.0

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-73.1 66.5
OPER	151.3	-121.9 110.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.38	20.77	-3.37	15.98
OPER	5C1T	-4.59	19.89	-3.53	15.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.67	2.68	HS 53.71	96.7
5C1T	26.52	5.57	0.00	446.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.200

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	168.7	-166.6	168.7	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	56.47 R	43.44	104.53	0.0	42.17	32.44	76.53	
		-41.81 L	-32.16	38.97	0.0	-33.84	-26.03	62.18	14.35
OPER	5C1T	52.93 L	40.71	-57.47	0.0	0.00	0.00	0.00	
		-40.72 L	-31.32	-36.82	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.74	107.5
5C1T	5.31	6.82	5.31	6.82	0.00	424.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300

	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
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. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.315

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		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.8	-166.8	155.6	-186.0
OPER	300.6C	-268.7	268.7	-300.6C	291.3	-277.9	259.4	-309.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93			
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00		
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	0.00			
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.80	1.91	5.36	HS 38.23	68.8
5C1T	4.05	7.33	3.61	8.18	0.00	288.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.300

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	-4.94	20.30	-3.80	15.62	-6.65	17.86	-5.11	13.74
OPER	5C1T	-6.52	16.62	-5.02	12.78	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.84	3.33	HS 66.60	119.9
5C1T	18.41	6.78	0.00	542.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	171.4	-163.9	171.4	-163.9	162.1	-173.2	162.1	-
OPER 288.7	279.4	-279.4	279.4	-279.4	270.1	-288.7	270.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.41 R	62.62	106.93	0.0	61.47	47.28	78.93	
		-34.71 L	-26.70	38.97	0.0	-28.30	-21.77	62.18	0.00
OPER	5C1T	71.90 L	55.31	31.93	0.0	0.00	0.00	0.00	
		-37.90 L	-29.16	-36.03	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.99	4.99	1.99	4.99	HS 39.81	71.7
5C1T	3.76	7.62	3.76	7.62	0.00	300.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.400

	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. S03
Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.315

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		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	170.8	-170.8	151.6	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.6	-284.7	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32			
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00		
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00			
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.19	1.67	6.88	HS 33.32	60.0
5C1T	3.41	7.99	3.03	8.88	0.00	242.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.37	16.91	-7.21	13.01	-9.20	14.91	-7.08	11.47
OPER	5C1T	-8.72	13.65	-6.71	10.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.57	4.06	HS 81.21	146.2
5C1T	13.56	8.39	0.00	670.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.2	174.0	-161.2	158.0	-177.2	158.0	-
OPER 295.4	279.4	-279.4	279.4	-279.4	263.4	-295.4	263.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.99	109.32	0.0	73.08	56.22	81.32	
		-27.61 L	-21.23	38.97	0.0	-24.82	-19.09	62.18	0.00
OPER	5C1T	83.54 R	64.26	132.32	0.0	0.00	0.00	0.00	
		-35.64 L	-27.42	-35.16	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.42	1.74	6.42	HS 34.74	62.5
5C1T	3.15	8.29	3.15	8.29	0.00	252.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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. S03
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.699	999999.000	100.315

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		20.21		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.83	L	67.56	69.71	0.0	77.68	59.75	83.71		
		-20.50	L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00	
OPER	5C1T	87.09	L	66.99	32.71	0.0	0.00	0.00	0.00		
		-34.42	L	-26.47	-34.42	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.93	8.07	1.71	8.97	HS 34.19	61.5
5C1T	3.24	8.34	2.87	9.27	0.00	229.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.500

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.0	0.0
	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-13.38	13.38	-10.29	10.29	-11.98	12.00	-9.21	9.23
OPER	5C1T	-11.12	11.15	-8.55	8.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.21	HS 104.25	187.7
5C1T	10.48	10.43	0.00	834.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.500Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

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. 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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.83 L	67.56	69.71	0.0	77.68	59.75	83.71	
		-20.50 L	-15.77	38.97	0.0	-21.34	-16.41	62.18	0.00
OPER	5C1T	87.09 L	66.99	32.71	0.0	0.00	0.00	0.00	
		-34.42 L	-26.47	-34.42	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.78	8.38	1.78	8.38	HS 35.66	64.2
5C1T	3.00	8.65	3.00	8.65	0.00	239.7

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
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. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.4	-284.9	252.4	-316.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10			
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00		
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00			
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.20	1.66	6.89	HS 33.30	59.9
5C1T	3.40	8.15	3.01	9.07	0.00	241.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-16.91	9.37	-13.01	7.21	-14.88	9.23	-11.45	7.10
OPER	5C1T	-13.64	8.76	-10.49	6.74	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	4.06	7.57	81.28
5C1T	8.40	13.48	0.00
			Load Capacity (tons)
			146.3
			672.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.4	174.1	-161.2	174.1	-161.2	157.9	-177.4	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 L	69.98	58.10	0.0	73.15	56.27	86.10	
		-27.59 R	-21.22	128.45	0.0	-24.73	-19.03	105.23	0.00
OPER	5C1T	83.76 L	64.43	35.10	0.0	0.00	0.00	0.00	
		-34.94 R	-26.87	201.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.43	1.74	6.43	HS 34.71	62.5
5C1T	3.14	8.46	3.14	8.46	0.00	251.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700

	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 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. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 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	-167.0	155.3	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	290.9	-278.4	258.9	-310.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49			
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00		
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00			
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.82	1.91	5.37	HS 38.17	68.7
5C1T	4.05	7.48	3.61	8.34	0.00	288.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	120.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-20.30	4.94	-15.62	3.80	-17.84	6.68	-13.72	5.14
OPER	5C1T	-16.59	6.58	-12.76	5.06	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.33	10.78	HS 66.66	120.0	
5C1T	6.80	18.24	0.00	543.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.5	-163.7	171.5	-163.7	161.8	-173.5	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	81.40 L	62.61	60.49	0.0	61.60	47.38	88.49	
		-34.69 R	-26.68	128.45	0.0	-28.14	-21.65	105.23	0.00
OPER	5C1T	71.79 R	55.23	135.49	0.0	0.00	0.00	0.00	
		-37.24 R	-28.65	203.45	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	5.00	1.99	5.00	HS 39.75	71.6
5C1T	3.76	7.76	3.76	7.76	0.00	300.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800

	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
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. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.800

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	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88			
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07		
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00			
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.33	103.2
5C1T	5.62	6.70	5.03	7.51	0.00	402.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.6	73.1
OPER	151.3	-111.0	121.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.74	4.41	-15.96	3.40
OPER	5C1T	-19.87	4.66	-15.28	3.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.69	16.55	HS 53.75	96.7
5C1T	5.59	26.15	0.00	446.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.800

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 L	43.42	62.88	0.0	42.85	32.96	90.88	
		-41.78 R	-32.14	128.45	0.0	-33.33	-25.64	105.23	153.07
OPER	5C1T	53.63 R	41.25	224.88	0.0	0.00	0.00	0.00	
		-39.92 R	-30.71	204.23	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.61	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900

	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
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. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-14.8

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	190.0	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.8	-284.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28			
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71		
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00			
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.95	2.77	7.15	3.12	HS 55.44	99.8
5C1T	11.37	5.72	10.22	6.45	0.00	457.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.5	74.1
OPER	151.3	-109.2	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	2.97	-22.63	2.28	-23.51	3.18	-18.08	2.44
OPER	5C1T	-23.07	3.09	-17.74	2.38	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.23	23.33	HS 44.53	80.1	
5C1T	4.73	40.01	0.00	378.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 4.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -14.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.33 L	12.56	65.28	0.0	23.90	18.39	93.28	
		-54.67 L	-42.05	86.45	0.0	-50.83	-39.10	105.23	83.71
OPER	5C1T	27.86 R	21.43	227.28	0.0	0.00	0.00	0.00	
		-44.14 R	-33.95	205.84	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.42	2.89	7.42	2.89	HS 57.80	104.0
5C1T	10.61	5.97	10.61	5.97	0.00	477.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -32.5

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	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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00			
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	12.85	1.47	11.63	1.67	HS 29.46
5C1T	26.54	3.93	24.01	4.47	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.4
OPER	151.3	-107.4	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.80	-22.63	26.00	-23.51	26.03	-18.08	20.02
OPER	5C1T	-23.07	26.04	-17.74	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.91	HS 38.13	68.6
5C1T	4.12	4.12	0.00	329.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -32.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.04	1.54	12.04	1.54	HS 30.82	55.5
5C1T	24.86	4.12	24.86	4.12	0.00	329.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -32.5

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	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	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18			
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23		
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00			
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.85	1.47	11.63	1.67	HS 29.46
5C1T	26.54	3.93	24.01	4.47	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-8.2	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.4
OPER	151.3	-107.4	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.80	-26.00	26.00	-26.03	26.03	-20.02	20.02
OPER	5C1T	-26.04	26.04	-20.03	20.03	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.91	HS 38.13	68.6
5C1T	4.12	4.12	0.00	329.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -32.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.01 L	11.55	38.97	0.0	15.69	12.07	62.18	
		-94.97 R	-73.06	116.49	0.0	-85.13	-65.48	86.10	105.23
OPER	5C1T	12.66 L	9.74	-74.21	0.0	0.00	0.00	0.00	
		-59.25 R	-45.58	100.49	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.04	1.54	12.04	1.54	HS 30.82	55.5
5C1T	24.86	4.12	24.86	4.12	0.00	329.3

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 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. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-14.8

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	190.0	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.8	-284.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment w/o imp.	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.33 R	12.56	126.06	0.0	24.29	18.69	98.06			
		-54.67 R	-42.05	104.88	0.0	-50.85	-39.12	86.10	107.63		
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00	0.00			
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.82	2.77	7.03	3.12	HS 55.44	99.8
5C1T	11.37	5.72	10.22	6.45	0.00	457.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.100

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.6	0.0 6.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.1	65.5
OPER	151.3	-123.6	109.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	29.42	-2.19	22.63	-3.18	23.51	-2.44	18.08
OPER	5C1T	-3.09	23.07	-2.38	17.74	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.33	2.23	HS 44.53	80.1
5C1T	40.01	4.73	0.00	378.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -14.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	16.33 R	12.56	126.06	0.0	24.29	98.06
		-54.67 R	-42.05	104.88	0.0	-50.85	86.10
OPER	5C1T	27.86 L	21.43	-35.94	0.0	0.00	0.00
		-44.14 L	-33.95	-14.51	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	
HS20	7.30	2.89	7.30	2.89	104.0
5C1T	10.61	5.97	10.61	5.97	477.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.699
			999999.000
			99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.200

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	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45			
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27		
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00			
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.33	103.2
5C1T	5.62	6.70	5.03	7.51	0.00	402.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	5.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.1	66.6
OPER	151.3	-121.8	111.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.85	24.77	-2.19	19.06	-4.41	20.74	-3.40	15.96
OPER	5C1T	-4.66	19.87	-3.58	15.28	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.55	2.69	HS 53.75	96.7
5C1T	26.15	5.59	0.00	446.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.200

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 Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.45 R	43.42	128.45	0.0	42.38	32.60	100.45	
		-41.79 L	-32.14	62.88	0.0	-33.32	-25.63	86.10	38.27
OPER	5C1T	53.63 L	41.25	-33.55	0.0	0.00	0.00	0.00	
		-39.92 L	-30.71	-12.90	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.61	107.3
5C1T	5.23	6.97	5.23	6.97	0.00	418.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 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	-167.0	155.3	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	290.9	-278.4	258.9	-310.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84			
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00		
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00	0.00			
		-37.24 L	-28.65	-12.12	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	2.14	4.82	1.91	38.17	68.7
5C1T	4.05	7.48	3.61	0.00	288.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-4.94	20.30	-3.80	15.62	-6.68	17.84	-5.14	13.72
OPER	5C1T	-6.58	16.59	-5.06	12.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	3.33	HS 66.66	120.0
5C1T	18.24	6.80	0.00	543.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.5	-163.7	171.5	-163.7	161.8	-173.5	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	81.40 R	62.61	130.84	0.0	61.60	47.39	102.84	
		-34.69 L	-26.68	62.88	0.0	-28.14	-21.65	86.10	0.00
OPER	5C1T	71.79 L	55.23	55.84	0.0	0.00	0.00	0.00	
		-37.24 L	-28.65	-12.12	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.99	5.00	1.99	5.00	HS 39.75	71.6
5C1T	3.76	7.76	3.76	7.76	0.00	300.5

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 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. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.4	-284.9	252.4	-316.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23			
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00		
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00			
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.20	1.66	6.89	HS 33.30	59.9
5C1T	3.40	8.12	3.01	9.03	0.00	241.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.7

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-9.37	16.91	-7.21	13.01	-9.23	14.88	-7.10	11.45
OPER	5C1T	-8.76	13.64	-6.74	10.49	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.57	4.06	HS 81.28	146.3
5C1T	13.48	8.40	0.00	672.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.4	174.1	-161.2	174.1	-161.2	157.9	-177.4	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.98 R	69.98	133.23	0.0	73.15	56.27	105.23	
		-27.59 L	-21.22	62.88	0.0	-24.73	-19.03	86.10	0.00
OPER	5C1T	83.76 R	64.43	156.23	0.0	0.00	0.00	0.00	
		-35.09 L	-26.99	-11.24	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	6.43	1.74	6.43	HS 34.71	62.5
5C1T	3.14	8.43	3.14	8.43	0.00	251.4

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 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. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.699	999999.000	99.865

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.60		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63			
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00		
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00			
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.93	8.07	1.71	8.97	HS 34.19	61.5
5C1T	3.24	8.34	2.87	9.27	0.00	229.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.500

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	0.0 0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-13.38	13.38	-10.29	10.29	-12.00	11.98	-9.23	9.21
OPER	5C1T	-11.15	11.12	-8.58	8.55	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.22	HS 104.33	187.8
5C1T	10.44	10.47	0.00	835.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber +bend	top fiber -bend	bottom fi +bend	bottom fi -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 Moment w/imp.	Live Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Loc. of Conc. Load 2
INV.	HS20	87.83 R	67.56	121.63	0.0	77.68	59.75	107.63	
		-20.50 R	-15.77	152.37	0.0	-21.34	-16.41	129.15	0.00
OPER	5C1T	87.09 R	66.99	158.63	0.0	0.00	0.00	0.00	
		-34.42 R	-26.47	225.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.78	8.38	1.78	8.38	HS 35.66	64.2
5C1T	3.00	8.65	3.00	8.65	0.00	239.7

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.619

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 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	170.8	-170.8	151.6	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.6	-284.7	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02			
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15		0.00	
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00			
		-35.51 R	-27.31	225.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.88	6.19	1.67	6.88	HS 33.32	60.0
5C1T	3.41	8.02	3.03	8.92	0.00	242.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.600

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	-16.91	9.37	-13.01	7.21	-14.91	9.20	-11.47	7.08
OPER	5C1T	-13.65	8.72	-10.50	6.71	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.57	HS 81.21	146.2	
5C1T	8.39	13.56	0.00	670.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.2	174.0	-161.2	158.0	-177.2	158.0	-
OPER 295.4	279.4	-279.4	279.4	-279.4	263.4	-295.4	263.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	90.98 L	69.99	82.02	0.0	73.08	56.22	110.02	
		-27.60 R	-21.23	152.37	0.0	-24.82	-19.09	129.15	0.00
OPER	5C1T	83.53 L	64.26	59.02	0.0	0.00	0.00	0.00	
		-35.51 R	-27.31	225.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.74	6.42	1.74	6.42	HS 34.74	62.5
5C1T	3.15	8.32	3.15	8.32	0.00	252.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700

	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 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. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.619

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.8	-166.8	155.6	-186.0
OPER	300.6C	-268.7	268.7	-300.6C	291.3	-277.9	259.4	-309.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41			
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15		0.00	
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00	0.00			
		-37.90 R	-29.16	227.37	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.80	1.91	5.36	HS 38.23	68.8
5C1T	4.05	7.33	3.61	8.18	0.00	288.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.700

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	-20.30	4.94	-15.62	3.80	-17.86	6.65	-13.74	5.11
OPER	5C1T	-16.62	6.52	-12.78	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.33	10.84	HS 66.60	119.9
5C1T	6.78	18.41	0.00	542.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	171.4	-163.9	171.4	-163.9	162.1	-173.2	162.1	-
OPER 288.7	279.4	-279.4	279.4	-279.4	270.1	-288.7	270.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.41 L	62.62	84.41	0.0	61.47	47.28	112.41	
		-34.71 R	-26.70	152.37	0.0	-28.30	-21.77	129.15	0.00
OPER	5C1T	71.90 R	55.31	159.41	0.0	0.00	0.00	0.00	
		-37.90 R	-29.16	227.37	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.99	1.99	4.99	HS 39.81	71.7
5C1T	3.76	7.62	3.76	7.62	0.00	300.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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 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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.619

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.4	-298.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80			
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98		
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00			
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.83	2.87	4.29	HS 57.45	103.4
5C1T	5.71	6.56	5.11	7.34	0.00	408.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.5	73.1
OPER	151.3	-110.9	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.85	-19.06	2.19	-20.77	4.38	-15.98	3.37
OPER	5C1T	-19.89	4.59	-15.30	3.53	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.68	16.67	HS 53.71	96.7
5C1T	5.57	26.52	0.00	446.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.800

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	168.7	-166.6	168.7	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.47 L	43.44	86.80	0.0	42.64	32.80	114.80	
		-41.81 R	-32.16	152.37	0.0	-33.85	-26.03	129.15	176.98
OPER	5C1T	52.93 R	40.71	248.80	0.0	0.00	0.00	0.00	
		-40.72 R	-31.32	228.15	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.99	3.98	2.99	3.98	HS 59.74	107.5
5C1T	5.31	6.82	5.31	6.82	0.00	424.9

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.86	28.67	28.67	1.699
			999999.000
			100.619

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -15.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19			
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63		
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00			
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	8.07	2.76	7.26	3.11	HS 55.18	99.3
5C1T	11.75	5.59	10.57	6.30	0.00	447.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	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	-29.42	2.97	-22.63	2.28	-23.54	3.15	-18.10	2.42
OPER	5C1T	-23.11	3.04	-17.77	2.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.22	23.58	HS 44.49	80.1
5C1T	4.72	40.68	0.00	377.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.4 -15.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.34 L	12.57	89.19	0.0	23.62	18.17	117.19	
		-54.73 L	-42.10	110.37	0.0	-51.12	-39.32	129.15	107.63
OPER	5C1T	27.03 R	20.79	251.19	0.0	0.00	0.00	0.00	
		-45.02 R	-34.63	229.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.53	2.88	7.53	2.88	HS 57.54	103.6
5C1T	10.97	5.83	10.97	5.83	0.00	466.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.619

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02		
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	13.10	1.47	11.86	1.67	52.8
5C1T	27.88	3.89	25.24	4.43	311.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.3
OPER	151.3	-107.3	107.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.81	-22.63	26.01	-23.54	26.09	-18.10	20.07
OPER	5C1T	-23.11	26.30	-17.77	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.90	HS 38.05	68.5
5C1T	4.11	4.08	0.00	326.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000Dead Load Moment Superimposed Dead Load Moment
-3.0 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.28	1.53	12.28	1.53	HS 30.68	55.2
5C1T	26.13	4.07	26.13	4.07	0.00	325.6

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -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	-158.4
OPER	300.6C	-268.7	268.7	-300.6C	337.2	-232.1	305.2	-264.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07			
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15		110.02	
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00			
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	13.10	1.47	11.86	1.67	52.8
5C1T	27.88	3.89	25.24	4.43	311.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-8.3	8.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.4	64.3
OPER	151.3	-107.3	107.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.81	-26.00	26.01	-26.06	26.09	-20.04	20.07
OPER	5C1T	-26.09	26.30	-20.07	20.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.90	1.90	HS 38.05	68.5
5C1T	4.11	4.08	0.00	326.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.0 -33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.7	153.0	-182.3	153.0	-182.3	189.6	-145.7	189.6	-
OPER 242.8	279.4	-279.4	279.4	-279.4	316.0	-242.8	316.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	15.13 R	11.64	176.28	0.0	15.44	11.88	153.07	
		-94.99 L	-73.07	98.76	0.0	-85.49	-65.76	129.15	110.02
OPER	5C1T	12.09 R	9.30	291.07	0.0	0.00	0.00	0.00	
		-59.67 L	-45.90	114.76	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	12.28	1.53	12.28	1.53	HS 30.68	55.2
5C1T	26.13	4.07	26.13	4.07	0.00	325.6

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	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. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.86	28.67	28.67	1.699
			999999.000
			100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.4 -15.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.1	171.3	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98			
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54		
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00			
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.91	2.77	7.11 3.12	HS 55.30	99.5
5C1T	11.51	5.70	10.35 6.42	0.00	455.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-74.3	65.4
OPER	151.3	-123.8	109.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.86	29.44	-2.20	22.64	-3.15	23.57	-2.42	18.13
OPER	5C1T	-3.07	23.31	-2.36	17.93	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.59	2.22	HS 44.43	80.0
5C1T	40.27	4.68	0.00	374.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.100

Dead Load Moment Superimposed Dead Load Moment
-1.4 -15.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	160.9	-174.3	160.9	-174.3	177.7	-157.6	177.7	-
OPER 262.6	279.4	-279.4	279.4	-279.4	296.2	-262.6	296.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.30 R	12.54	149.98	0.0	24.08	18.52	121.98	
		-54.66 R	-42.05	128.80	0.0	-51.07	-39.28	110.02	131.54
OPER	5C1T	27.59 L	21.22	-12.02	0.0	0.00	0.00	0.00	
		-44.23 L	-34.02	9.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.38	2.88	7.38	2.88	HS 57.66	103.8
5C1T	10.73	5.94	10.73	5.94	0.00	475.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.200

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	161.9	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37			
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02		62.18	
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00			
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	HS 57.38	103.3
5C1T	5.66	6.68	5.06	7.48	0.00	404.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-2.86	24.79	-2.20	19.07	-4.35	20.80	-3.35	16.00
OPER	5C1T	-4.67	20.08	-3.59	15.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.82	2.68	HS 53.63	96.5
5C1T	26.13	5.52	0.00	441.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.200

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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.45 R	43.42	152.37	0.0	42.30	32.54	124.37	
		-41.78 L	-32.14	86.80	0.0	-33.37	-25.67	110.02	62.18
OPER	5C1T	53.38 L	41.06	-9.63	0.0	0.00	0.00	0.00	
		-40.02 L	-30.79	11.02	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	3.99	2.98	3.99	HS 59.66	107.4
5C1T	5.26	6.95	5.26	6.95	0.00	420.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300

	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
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. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.4	-167.2	155.2	-186.4
OPER	300.6C	-268.7	268.7	-300.6C	290.7	-278.6	258.7	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76			
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02		0.00	
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00			
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.14	4.82	1.91	5.37	HS 38.13	68.6
5C1T	4.03	7.46	3.58	8.31	0.00	286.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-4.94	20.31	-3.80	15.62	-6.61	17.90	-5.08	13.77
OPER	5C1T	-6.57	16.79	-5.06	12.92	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.91	3.33	HS 66.53	119.8
5C1T	18.28	6.70	0.00	536.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.6	171.6	-163.7	171.6	-163.7	161.7	-173.6	161.7	-
OPER 289.4	279.4	-279.4	279.4	-279.4	269.4	-289.4	269.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	81.41 R	62.62	154.76	0.0	61.68	47.45	126.76	
		-34.69 L	-26.69	86.80	0.0	-28.07	-21.59	110.02	0.00
OPER	5C1T	72.21 L	55.54	79.76	0.0	0.00	0.00	0.00	
		-37.37 L	-28.74	11.80	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	5.00	1.99	5.00	HS 39.72	71.5
5C1T	3.73	7.74	3.73	7.74	0.00	298.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400

	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
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. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 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	170.3	-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.	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	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15			
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02		0.00	
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00			
		-35.16 L	-27.04	13.41	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	1.87	6.21	1.66	33.21	59.8
5C1T	3.38	8.12	3.00	0.00	239.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.0	68.6
OPER	151.3	-118.4	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.37	16.92	-7.21	13.02	-9.16	14.95	-7.05	11.50
OPER	5C1T	-8.74	13.83	-6.72	10.64	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.58	4.06	HS 81.11	146.0	
5C1T	13.55	8.27	0.00	661.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 15.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.97 R	69.98	157.15	0.0	73.39	56.45	129.15	
		-27.61 L	-21.24	86.80	0.0	-24.53	-18.87	110.02	0.00
OPER	5C1T	84.00 R	64.62	180.15	0.0	0.00	0.00	0.00	
		-35.16 L	-27.04	13.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.73	6.44	1.73	6.44	HS 34.63	62.3
5C1T	3.12	8.43	3.12	8.43	0.00	250.0

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 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. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.86	28.67	28.67	1.699	999999.000	100.505

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		21.28		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54			
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07		0.00	
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00			
		-34.26 L	-26.35	13.41	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.92	8.18	1.70	9.09	HS 34.02	61.2
5C1T	3.18	8.41	2.82	9.35	0.00	225.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.500

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	-13.39	13.39	-10.30	10.30	-11.93	12.04	-9.18	9.26
OPER	5C1T	-11.10	11.30	-8.54	8.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.22	5.20	HS 104.09	187.4
5C1T	10.51	10.28	0.00	822.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.500Dead Load Moment 1.6
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.4	175.4	-159.8	175.4	-159.8	155.9	-179.4	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	87.89 R	67.61	145.54	0.0	78.07	60.06	131.54	
		-20.67 R	-15.90	176.28	0.0	-21.13	-16.25	153.07	0.00
OPER	5C1T	88.32 L	67.94	80.54	0.0	0.00	0.00	0.00	
		-34.26 L	-26.35	13.41	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.77	8.49	1.77	8.49	HS 35.48	63.9
5C1T	2.94	8.73	2.94	8.73	0.00	235.4

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 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. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 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	-190.9
OPER	300.6C	-268.7	268.7	-300.6C	283.1	-286.2	251.1	-318.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	91.09 L	70.07	105.93	0.0	73.64	56.65	133.93			
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86	153.07	0.00		
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00	0.00			
		-34.21 L	-26.31	14.28	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.87	6.17	1.65	HS 33.08	59.5
5C1T	3.32	8.37	2.94	0.00	235.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.7	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.93	9.38	-13.02	7.22	-14.84	9.27	-11.41	7.13
OPER	5C1T	-13.57	8.87	-10.44	6.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.06	7.55	HS 81.27	146.3	
5C1T	8.45	13.32	0.00	675.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 296.9	279.4	-279.4	279.4	-279.4	261.9	-296.9	261.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	91.09 L	70.07	105.93	0.0	73.64	56.65
		-27.83 R	-21.41	176.28	0.0	-24.52	-18.86
OPER	5C1T	85.31 L	65.62	82.93	0.0	0.00	0.00
		-34.21 L	-26.31	14.28	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.73	6.40	1.73	6.40
5C1T	3.07	8.68	3.07	8.68

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.700

Dead Load Moment Superimposed Dead Load Moment
0.9 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	173.6	-168.0	154.4	-187.2
OPER	300.6C	-268.7	268.7	-300.6C	289.3	-279.9	257.4	-311.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33			
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07		0.00	
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00			
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	4.80	1.89	5.35	HS 37.86	68.2
5C1T	3.96	7.82	3.52	8.71	0.00	281.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.700

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/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.31	4.96	-15.63	3.81	-17.79	6.71	-13.69	5.16
OPER	5C1T	-16.57	6.65	-12.75	5.12	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.33	10.72	HS 66.66	120.0	
5C1T	6.81	18.02	0.00	544.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity top fiber		Moment Capacity bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber +bend	top fiber -bend	bottom fi +bend	bottom fi -bend
INV. 174.4	172.2	-163.1	172.2	-163.1	160.9	-174.4	160.9	-
OPER 290.7	279.4	-279.4	279.4	-279.4	268.1	-290.7	268.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Live Load Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Loc. of Conc. Load 2
INV.	HS20	81.57 L	62.74	108.33	0.0	62.17	47.83	136.33	
		-34.99 R	-26.92	176.28	0.0	-27.90	-21.46	153.07	0.00
OPER	5C1T	73.11 R	56.24	183.33	0.0	0.00	0.00	0.00	
		-35.82 R	-27.55	164.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.97	4.99	1.97	4.99	HS 39.44	71.0
5C1T	3.67	8.11	3.67	8.11	0.00	293.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.800

Dead Load Moment 0.0
Superimposed Dead Load Moment 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	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	299.9	-269.4	267.9	-301.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72			
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98		
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00			
		-38.13 R	-29.33	252.07	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.17	3.84	2.84	4.29	HS 56.74	102.1
5C1T	5.48	7.07	4.89	7.90	0.00	391.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-66.6	73.0
OPER	151.3	-111.1	121.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.77	2.84	-19.05	2.19	-20.70	4.45	-15.92	3.42
OPER	5C1T	-19.81	4.73	-15.24	3.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.69	16.42	HS 53.81	96.9
5C1T	5.61	25.70	0.00	448.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.800

Dead Load Moment 0.0
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.3	167.9	-167.3	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	56.67 L	43.59	110.72	0.0	43.47	33.44	138.72	
		-42.15 R	-32.42	176.28	0.0	-31.76	-24.43	153.07	121.98
OPER	5C1T	54.76 R	42.12	272.72	0.0	0.00	0.00	0.00	
		-38.13 R	-29.33	252.07	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.95	3.99	2.95	3.99	HS 59.01	106.2
5C1T	5.09	7.35	5.09	7.35	0.00	407.1

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	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. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.79	28.67	28.67	1.699	999999.000	96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-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.	180.4C	-161.2	161.2	-180.4C	188.8	-152.7	169.7	-171.9
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.5	282.8	-286.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11			
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07		131.54	
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00			
		-42.36 R	-32.58	167.46	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.70	2.75	6.92	3.09	HS 54.94	98.9
5C1T	10.68	6.01	9.60	6.76	0.00	480.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.5
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.1
OPER	151.3	-109.3	123.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-29.42	2.96	-22.63	2.28	-23.47	3.20	-18.05	2.46
OPER	5C1T	-22.99	3.18	-17.69	2.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.23	23.17	HS 44.57	80.2
5C1T	4.75	38.80	0.00	380.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-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. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.3	279.4	-279.4	279.4	-279.4	293.5	-265.3	293.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.56 L	12.74	113.11	0.0	24.52	18.86	141.11	
		-55.60 L	-42.77	134.28	0.0	-50.37	-38.74	153.07	131.54
OPER	5C1T	29.46 R	22.66	275.11	0.0	0.00	0.00	0.00	
		-42.36 R	-32.58	167.46	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	7.18	2.86	7.18	2.86	HS 57.26	103.1
5C1T	9.96	6.26	9.96	6.26	0.00	501.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.98	1.48	9.02	1.68	HS 29.65
5C1T	20.78	3.97	18.79	4.51	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-6.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.7
OPER	151.3	-107.5	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.42	33.97	-22.63	26.13	-23.47	25.86	-18.05	19.89
OPER	5C1T	-22.99	25.68	-17.69	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.90	HS 38.10	68.6
5C1T	4.14	4.20	0.00	331.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.34	1.55	9.34	1.55	HS 31.00	55.8
5C1T	19.46	4.15	19.46	4.15	0.00	332.3

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			96.981

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		8.33	
			109.1
			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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

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	200.3	-141.2	181.1	-160.4
OPER	300.6C	-268.7	268.7	-300.6C	333.9	-235.4	301.9	-267.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98			
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93		
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00			
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.98	1.48	9.02	1.68	HS 29.65
5C1T	20.78	3.97	18.79	4.51	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.7	-8.2	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.5	64.7
OPER	151.3	-107.5	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-33.80	33.97	-26.00	26.13	-25.99	25.86	-20.00	19.89
OPER	5C1T	-25.95	25.68	-19.96	19.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.91	1.90	HS 38.10	68.6
5C1T	4.14	4.20	0.00	331.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-2.8 -30.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.7	154.3	-180.9	154.3	-180.9	187.6	-147.7	187.6	-
OPER 246.2	279.4	-279.4	279.4	-279.4	312.6	-246.2	312.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	20.08 R	15.45	200.20	0.0	17.83	13.72	176.98	
		-95.28 L	-73.29	122.68	0.0	-84.60	-65.08	153.07	133.93
OPER	5C1T	16.07 R	12.36	313.38	0.0	0.00	0.00	0.00	
		-59.26 R	-45.58	148.28	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	9.34	1.55	9.34	1.55	HS 31.00	55.8
5C1T	19.46	4.15	19.46	4.15	0.00	332.3

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 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. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.100

Dead Load Superimposed Dead Load
Moment Moment
-1.3 -13.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.4	-152.2	170.2	-171.4
OPER	300.6C	-268.7	268.7	-300.6C	315.6	-253.7	283.6	-285.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89			
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46		
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00			
		-43.80 L	-33.69	32.54	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.72	2.79	6.94	3.14	55.75
5C1T	11.13	5.79	10.01	6.52	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-3.79	29.62	-2.92	22.79	-3.74	23.37	-2.88	17.97
OPER	5C1T	-3.75	22.61	-2.88	17.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	19.47	2.22	HS 44.41	79.9
5C1T	32.85	4.85	0.00	387.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.100

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.6	161.6	-173.6	161.6	-173.6	176.6	-158.6	176.6	-
OPER 264.4	279.4	-279.4	279.4	-279.4	294.4	-264.4	294.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.01 R	12.32	173.89	0.0	24.53	18.87	145.89	
		-54.60 R	-42.00	152.72	0.0	-50.61	-38.93	133.93	155.46
OPER	5C1T	28.35 L	21.81	98.89	0.0	0.00	0.00	0.00	
		-43.80 L	-33.69	32.54	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.20	2.91	7.20	2.91	HS 58.12	104.6
5C1T	10.39	6.04	10.39	6.04	0.00	482.9

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 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. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.200

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	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28			
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10		
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00			
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.21	3.84	2.87	4.30	57.36
5C1T	5.65	6.70	5.05	7.50	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.8	66.9
OPER	151.3	-121.3	111.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	24.99	-2.92	19.22	-4.48	20.63	-3.45	15.87
OPER	5C1T	-5.47	19.38	-4.20	14.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.25	2.68	HS 53.52	96.3
5C1T	22.19	5.75	0.00	459.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.200

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 Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	56.43 R	43.40	176.28	0.0	42.35	32.58	148.28	
		-41.77 L	-32.13	110.72	0.0	-33.28	-25.60	133.93	86.10
OPER	5C1T	53.40 L	41.08	14.28	0.0	0.00	0.00	0.00	
		-39.94 L	-30.72	34.93	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.98	4.00	2.98	4.00	HS 59.64	107.4
5C1T	5.25	6.97	5.25	6.97	0.00	420.1

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 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. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 8.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.2	-166.4	156.0	-185.6
OPER	300.6C	-268.7	268.7	-300.6C	292.0	-277.3	260.0	-309.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68			
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00		
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00			
		-37.96 L	-29.20	35.72	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.15	4.78	1.91	5.33	HS 38.28	68.9
5C1T	4.09	7.30	3.64	8.15	0.00	291.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 2.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.7	67.9
OPER	151.3	-119.5	113.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.89	20.39	-3.76	15.68	-6.71	17.75	-5.16	13.65
OPER	5C1T	-7.39	16.16	-5.68	12.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.69	3.33	HS 66.64	120.0
5C1T	16.18	7.01	0.00	560.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.300Dead Load Moment 0.7
Superimposed Dead Load Moment 8.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 288.0	279.4	-279.4	279.4	-279.4	270.8	-288.0	270.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	81.52 R	62.71	178.68	0.0	61.38	47.22	150.68	
		-34.81 L	-26.77	110.72	0.0	-28.55	-21.96	133.93	0.00
OPER	5C1T	71.38 L	54.91	16.68	0.0	0.00	0.00	0.00	
		-37.96 L	-29.20	35.72	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.99	4.97	1.99	4.97	HS 39.86	71.7
5C1T	3.79	7.59	3.79	7.59	0.00	303.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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
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. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.79	28.67	28.67	1.699
			999999.000
			97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.6	152.8	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.6	-282.7	254.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07			
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00		
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00			
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.89	6.09	1.68	6.78	HS 33.60	60.5
5C1T	3.48	7.67	3.10	8.54	0.00	247.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.2

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -70.6 69.0
OPER 151.3 -117.7 115.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.38	17.02	-7.21	13.09	-9.23	14.82	-7.10	11.40
OPER	5C1T	-9.45	13.22	-7.27	10.17	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.53	4.06	HS 81.12	146.0
5C1T	12.45	8.70	0.00	696.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.0	173.2	-162.0	159.2	-176.0	159.2	-
OPER 293.4	279.4	-279.4	279.4	-279.4	265.4	-293.4	265.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	90.93 R	69.95	181.07	0.0	72.82	56.01	153.07	
		-27.85 L	-21.42	110.72	0.0	-25.56	-19.66	133.93	0.00
OPER	5C1T	82.25 R	63.27	204.07	0.0	0.00	0.00	0.00	
		-36.85 L	-28.35	37.33	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.75	6.32	1.75	6.32	HS 35.02	63.0
5C1T	3.23	7.96	3.23	7.96	0.00	258.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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 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. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.79	28.67	28.67	1.699	999999.000	97.119

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		8.33		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	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 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	171.3	-170.2	152.1	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46			
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98		0.00	
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00			
		-37.69 R	-28.99	227.98	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	1.93	6.21	1.72	34.31	61.8
5C1T	3.35	7.53	2.98	0.00	238.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.5	0.1

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-69.6 70.1
OPER	151.3	-115.9 116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.48	13.52	-10.37	10.40	-11.97	11.93	-9.21	9.17
OPER	5C1T	-11.58	10.75	-8.91	8.27	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.16	5.18	HS 103.17	185.7
5C1T	10.01	10.87	0.00	800.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.500

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.5	279.4	-279.4	279.4	-279.4	264.3	-294.5	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.69 R	68.22	169.46	0.0	77.29	59.45	155.46	
		-27.43 R	-21.10	200.20	0.0	-24.49	-18.84	176.98	0.00
OPER	5C1T	85.16 R	65.51	206.46	0.0	0.00	0.00	0.00	
		-37.69 R	-28.99	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	6.44	1.79	6.44	HS 35.76	64.4
5C1T	3.10	7.81	3.10	7.81	0.00	248.3

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 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. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.600

Dead Load Moment 0.9
Superimposed Dead Load Moment 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.	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	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85			
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00		
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00			
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.87	4.55	1.66	HS 33.30	59.9
5C1T	3.56	7.03	3.17	0.00	253.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.2	0.0

Rat.	Shear	Capacity	Available Capacity for LL+I
Veh.		VU	(-) (+)
INV.	90.8		-68.4 71.2
OPER	151.3		-114.0 118.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
Typ.	Veh.	w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.12	9.55	-13.17	7.34	-14.86	9.16	-11.43	7.04
OPER	5C1T	-13.97	8.47	-10.75	6.51	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating	Factor	Rating	Load	
	(-)	(+)	Value	Capacity	
				(tons)	
HS20	3.99	7.46	HS 79.90	143.8	
5C1T	8.16	14.03	0.00	652.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.600Dead Load Moment 0.9
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	92.63 L	71.26	129.85	0.0	72.64	55.87	157.85	
		-36.93 R	-28.41	200.20	0.0	-29.05	-22.34	176.98	0.00
OPER	5C1T	81.12 L	62.40	58.85	0.0	0.00	0.00	0.00	
		-39.88 R	-30.68	227.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.74	4.73	1.74	4.73	HS 34.70	62.5
5C1T	3.30	7.30	3.30	7.30	0.00	264.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.700

	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. S03
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.700

Dead Load Moment 0.3
Superimposed Dead Load Moment 3.5

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	178.1	-163.4	158.9	-182.6
OPER	300.6C	-268.7	268.7	-300.6C	296.9	-272.4	264.9	-304.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	83.79 L	64.45	132.24	0.0	60.87	46.82	160.24			
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85	176.98	0.00		
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00	0.00			
		-42.29 R	-32.53	188.20	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.13	3.52	1.90	3.93	HS 37.94	68.3
5C1T	4.26	6.44	3.80	7.20	0.00	303.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.700

Dead Load	Superimposed Dead Load
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	-20.51	5.15	-15.77	3.96	-17.81	6.59	-13.70	5.07
OPER	5C1T	-16.67	6.39	-12.82	4.91	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.28	10.98	HS 65.67
5C1T	6.73	18.87	0.00
			Load Capacity (tons)
			118.2
			538.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.700Dead Load Moment 0.3
Superimposed Dead Load Moment 3.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 169.9	169.1	-166.1	169.1	-166.1	165.4	-169.9	165.4	-
OPER 283.2	279.4	-279.4	279.4	-279.4	275.6	-283.2	275.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Live Load Moment w/o imp.	Loc. of Conc. Load 1	Live Load Moment w/imp.	Loc. of Conc. Load 2
INV.	HS20	83.79 L	64.45	132.24	0.0	60.87	46.82
		-46.43 R	-35.72	200.20	0.0	-33.60	-25.85
OPER	5C1T	69.73 L	53.64	57.24	0.0	0.00	0.00
		-42.29 R	-32.53	188.20	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
HS20	1.97	3.66	1.97	3.66
5C1T	3.95	6.70	3.95	6.70

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 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. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.800

Dead Load Superimposed Dead Load
Moment Moment
-0.7 -7.6

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	185.4	-156.2	166.2	-175.4
OPER	300.6C	-268.7	268.7	-300.6C	309.0	-260.3	277.0	-292.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63			
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10		
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00			
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.12	2.79	2.80	3.13	55.85
5C1T	6.63	5.64	5.94	6.34	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.4
OPER	151.3	-110.4	122.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.68	2.79	-18.98	2.15	-20.73	4.29	-15.95	3.30
OPER	5C1T	-20.19	4.56	-15.53	3.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.68	17.10	HS 53.69	96.6
5C1T	5.47	26.85	0.00	437.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.800

Dead Load Moment Superimposed Dead Load Moment
-0.7 -7.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.6	164.3	-171.0	164.3	-171.0	172.6	-162.6	172.6	-
OPER 271.1	279.4	-279.4	279.4	-279.4	287.7	-271.1	287.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	59.45 L	45.73	134.63	0.0	40.91	31.47	162.63	
		-55.93 R	-43.03	200.20	0.0	-38.16	-29.36	176.98	86.10
OPER	5C1T	46.63 L	35.87	146.63	0.0	0.00	0.00	0.00	
		-46.11 R	-35.47	275.98	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.90	2.91	2.90	2.91	HS 58.08	104.5
5C1T	6.17	5.88	6.17	5.88	0.00	470.2

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 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. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.93	28.67	28.67	1.699
			999999.000
			104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-2.1	-22.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	195.2	-146.3	176.0	-165.5
OPER	300.6C	-268.7	268.7	-300.6C	325.4	-243.9	293.4	-275.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00	
		-53.56 R	-41.20	193.77	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	9.30	2.16	8.39	2.45	HS 43.25	77.9
5C1T	15.18	4.55	13.69	5.15	0.00	364.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.2	74.5
OPER	151.3	-108.6	124.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-29.37	2.91	-22.59	2.24	-23.54	2.89	-18.11	2.22
OPER	5C1T	-23.58	3.00	-18.14	2.31	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.22	25.59	HS 44.38	79.9
5C1T	4.61	41.37	0.00	368.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-2.1 -22.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.8	157.7	-177.5	157.7	-177.5	182.5	-152.8	182.5	-
OPER 254.7	279.4	-279.4	279.4	-279.4	304.1	-254.7	304.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	19.54 L	15.03	137.03	0.0	20.99	16.15	165.03	
		-67.67 L	-52.05	158.20	0.0	-56.18	-43.21	176.98	153.07
OPER	5C1T	21.43 L	16.48	27.03	0.0	0.00	0.00	0.00	
		-53.56 R	-41.20	193.77	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	8.69	2.26	8.69	2.26	HS 45.16	81.3
5C1T	14.19	4.76	14.19	4.76	0.00	380.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.93	28.67	28.67	1.699	999999.000	104.581

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		33.68		103.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85		
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00			
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	14.91	1.33	13.54	1.52	26.55
5C1T	29.60	3.06	26.87	3.49	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

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	63.3
OPER	151.3	-106.8	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	-29.37	36.19	-22.59	27.84	-23.54	26.36	-18.11	20.28
OPER	5C1T	-23.58	27.13	-18.14	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.75	HS 34.96	62.9
5C1T	4.01	3.89	0.00	310.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -41.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.00	1.39	14.00	1.39	HS 27.83	50.1
5C1T	27.79	3.20	27.79	3.20	0.00	256.2

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 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. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

Dead Load Superimposed Dead Load
Moment Moment
-3.8 -41.7

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	207.6	-133.9	188.5	-153.1
OPER	300.6C	-268.7	268.7	-300.6C	346.1	-223.2	314.1	-255.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93			
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98		157.85	
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00			
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	14.91	1.33	13.54	1.52	HS 26.55 47.8
5C1T	29.60	3.06	26.87	3.49	0.00 244.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.9	-8.8	10.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.1	63.3
OPER	151.3	-106.8	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	-33.82	36.19	-26.01	27.84	-26.13	26.36	-20.10	20.28
OPER	5C1T	-26.68	27.13	-20.52	20.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.89	1.75	HS 34.96	62.9
5C1T	4.01	3.89	0.00	310.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.8 -41.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.4	149.5	-185.8	149.5	-185.8	194.9	-140.4	194.9	-
OPER 234.0	279.4	-279.4	279.4	-279.4	324.8	-234.0	324.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	13.92 L	10.71	110.72	0.0	10.60	8.15	133.93	
		-100.87 R	-77.59	188.59	0.0	-90.69	-69.76	176.98	157.85
OPER	5C1T	11.69 L	8.99	-2.46	0.0	0.00	0.00	0.00	
		-73.05 L	-56.19	162.59	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	14.00	1.39	14.00	1.39	HS 27.83	50.1
5C1T	27.79	3.20	27.79	3.20	0.00	256.2

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.100

Dead Load Superimposed Dead Load
Moment Moment
-1.8 -19.6

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	193.2	-148.3	174.0	-167.5
OPER	300.6C	-268.7	268.7	-300.6C	322.1	-247.2	290.1	-279.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81			
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77		
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00			
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.21	2.73	8.30	3.08	HS 54.61	98.3
5C1T	13.14	5.34	11.84	6.03	0.00	427.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.8	0.0	8.4

Rat.	Shear Capacity	Available Capacity for LL+I	
Veh.	VU	(-)	(+)
INV.	90.8	-75.3	64.3
OPER	151.3	-125.5	107.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.56	32.21	-0.43	24.77	-1.24	24.21	-0.95	18.62
OPER	5C1T	-0.88	24.44	-0.67	18.80	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.83	2.00	HS 39.95	71.9
5C1T	143.23	4.39	0.00	351.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.8 -19.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.8	159.1	-176.2	159.1	-176.2	180.5	-154.8	180.5	-
OPER 258.0	279.4	-279.4	279.4	-279.4	300.8	-258.0	300.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	10.48 L	8.06	105.93	0.0	20.98	16.14	169.81	
		-53.85 L	-41.42	148.63	0.0	-54.33	-41.79	157.85	181.77
OPER	5C1T	24.50 L	18.85	35.81	0.0	0.00	0.00	0.00	
		-46.28 R	-35.60	204.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.60	2.85	8.60	2.85	HS 56.98	102.6
5C1T	12.28	5.57	12.28	5.57	0.00	445.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-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. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.4	-298.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20			
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02		
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00			
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.27	3.85	2.93	4.32	HS 58.52
5C1T	5.71	6.64	5.10	7.43	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.7

Rat.	Shear Capacity	Available Capacity for LL+I
Veh.	VU	(-) (+)
INV.	90.8	-74.2 65.4
OPER	151.3	-123.7 109.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Rat.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
Typ.	Veh.	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.03	27.72	-0.79	21.32	-2.66	21.85	-2.05	16.81
OPER	5C1T	-2.34	21.45	-1.80	16.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	27.89	2.36	HS 47.19	84.9
5C1T	52.98	5.08	0.00	406.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.200

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.	167.0	-168.3	167.0	-168.3	168.7	-166.6	168.7	-
166.6								
OPER	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-
277.7								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	55.44 R	42.64	200.20	0.0	41.77	32.13	172.20	
		-41.57 L	-31.98	134.63	0.0	-33.15	-25.50	157.85	110.02
OPER	5C1T	52.97 L	40.75	38.20	0.0	0.00	0.00	0.00	
		-40.23 L	-30.94	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Rating Value		Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	
HS20	3.04	4.01	3.04	4.01	HS 60.85
5C1T	5.31	6.90	5.31	6.90	0.00

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300

	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. S03
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.69	28.67	28.67	1.699	999999.000	91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.6

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	172.1	-169.4	153.0	-188.6
OPER	300.6C	-268.7	268.7	-300.6C	286.9	-282.4	254.9	-314.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59			
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85		110.02	
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00			
		-35.20 L	-27.08	58.85	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	1.94	4.66	1.72	34.42	62.0
5C1T	3.73	8.02	3.32	0.00	265.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-2.98	22.80	-2.29	17.54	-4.42	19.32	-3.40	14.86
OPER	5C1T	-4.09	18.62	-3.15	14.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.54	2.92	HS 58.32	105.0
5C1T	29.81	5.95	0.00	476.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.300

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.9	173.1	-162.1	173.1	-162.1	159.4	-175.9	159.4	-
OPER 293.1	279.4	-279.4	279.4	-279.4	265.7	-293.1	265.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	88.88 R	68.37	202.59	0.0	64.70	49.77	174.59	
		-36.37 L	-27.98	134.63	0.0	-28.96	-22.28	157.85	110.02
OPER	5C1T	76.85 R	59.12	225.59	0.0	0.00	0.00	0.00	
		-35.20 L	-27.08	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.79	4.84	1.79	4.84	HS 35.87	64.6
5C1T	3.46	8.33	3.46	8.33	0.00	276.6

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 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. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.69	28.67	28.67	1.699	999999.000	91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.400

Dead Load Moment 2.0
Superimposed Dead Load Moment 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.	180.4C	-161.2	161.2	-180.4C	165.5	-176.1	146.3	-195.3
OPER	300.6C	-268.7	268.7	-300.6C	275.8	-293.5	243.8	-325.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98			
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00		
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00			
		-30.17 L	-23.21	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.60	5.65	1.41	6.26	HS 28.30	50.9
5C1T	2.88	9.73	2.55	10.79	0.00	204.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.3 0.0 3.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -72.1 67.6
OPER 151.3 -120.1 112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.62	18.34	-5.09	14.11	-6.50	16.67	-5.00	12.83
OPER	5C1T	-6.09	15.87	-4.68	12.21	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.88	3.68	HS 73.67	132.6
5C1T	19.74	7.09	0.00	567.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.400

Dead Load Moment 2.0
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 182.6	177.6	-157.7	177.6	-157.7	152.7	-182.6	152.7	-
OPER 304.3	279.4	-279.4	279.4	-279.4	254.5	-304.3	254.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	103.37 R	79.51	204.98	0.0	81.03	62.33	176.98	
		-31.18 L	-23.98	134.63	0.0	-23.74	-18.26	157.85	0.00
OPER	5C1T	95.59 R	73.53	227.98	0.0	0.00	0.00	0.00	
		-30.17 L	-23.21	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.48	5.86	1.48	5.86	HS 29.55	53.2
5C1T	2.66	10.09	2.66	10.09	0.00	213.0

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	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. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.69	28.67	28.67	1.699
			999999.000
			91.345

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		13.36		106.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.500

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.1

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	161.4	-180.2	142.2	-199.4
OPER	300.6C	-268.7	268.7	-300.6C	268.9	-300.4	236.9	-332.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38			
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00		
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00			
		-25.14 L	-19.34	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.42	6.94	1.25	7.68	HS 25.03	45.1
5C1T	2.59	11.95	2.28	13.22	0.00	182.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

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	-9.50	15.37	-7.31	11.82	-8.87	13.95	-6.82	10.73
OPER	5C1T	-8.43	13.29	-6.49	10.23	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.47	4.47	HS 89.34	160.8	
5C1T	14.03	8.61	0.00	688.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.500

Dead Load Moment	Superimposed Dead Load Moment
2.6	29.1

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	180.3	-155.0	180.3	-155.0	148.6	-186.7	148.6	-
186.7								
OPER	279.4	-279.4	279.4	-279.4	247.7	-311.1	247.7	-
311.1								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	113.58 R	87.37	207.38	0.0	91.16	70.12	179.38	
		-25.98 L	-19.98	134.63	0.0	-19.78	-15.22	157.85	0.00
OPER	5C1T	103.89 R	79.92	230.38	0.0	0.00	0.00	0.00	
		-25.14 L	-19.34	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	1.31	7.18	1.31	7.18	HS 26.17	47.1
5C1T	2.38	12.37	2.38	12.37	0.00	190.7

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 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. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.600

Dead Load Moment 2.8
Superimposed Dead Load Moment 31.2

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	160.0	-181.6	140.8	-200.8
OPER	300.6C	-268.7	268.7	-300.6C	266.7	-302.6	234.7	-334.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77			
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00		
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00			
		-20.11 L	-15.47	58.85	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	1.36	8.74	1.20	9.66
5C1T	2.52	15.04	2.22	16.64

HS 23.91 43.0
0.00 177.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.0	0.0
	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-12.31	11.85	-9.47	9.12	-11.52	11.20	-8.86	8.62
OPER	5C1T	-11.06	10.81	-8.51	8.31	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.67	5.89	HS 113.45	204.2
5C1T	10.52	10.77	0.00	841.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.600

Dead Load Moment Superimposed Dead Load Moment
2.8 31.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 188.0	181.2	-154.1	181.2	-154.1	147.3	-188.0	147.3	-
OPER 313.3	279.4	-279.4	279.4	-279.4	245.5	-313.3	245.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	Load 1	Load 2
INV.	HS20	117.79 R	90.61	195.77	0.0	92.13	70.87	181.77	
		-20.78 L	-15.99	134.63	0.0	-15.83	-12.17	157.85	0.00
OPER	5C1T	105.90 L	81.46	82.77	0.0	0.00	0.00	0.00	
		-20.11 L	-15.47	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.25	9.05	1.25	9.05	HS 25.01	45.0
5C1T	2.32	15.58	2.32	15.58	0.00	185.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment 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. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.700

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	161.2	-180.3	142.1	-199.5
OPER	300.6C	-268.7	268.7	-300.6C	268.7	-300.6	236.8	-332.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16			
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85		0.00	
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00			
		-15.09 L	-11.60	58.85	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.37	11.57	1.21	12.80	HS 24.10	43.4
5C1T	2.67	19.92	2.35	22.04	0.00	188.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-16.43	8.87	-12.64	6.82	-14.43	8.45	-11.10	6.50
OPER	5C1T	-14.03	8.18	-10.79	6.30	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	4.19	7.99	HS 83.71
5C1T	8.17	14.43	0.00
			Load Capacity (tons)
			150.7
			653.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.700

Dead Load Moment 2.6
Superimposed Dead Load Moment 29.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 186.8	180.4	-154.9	180.4	-154.9	148.5	-186.8	148.5	-
OPER 311.3	279.4	-279.4	279.4	-279.4	247.5	-311.3	247.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	117.89 R	90.68	198.16	0.0	84.85	65.27	184.16	
		-15.59 L	-11.99	134.63	0.0	-11.87	-9.13	157.85	0.00
OPER	5C1T	100.64 L	77.41	81.16	0.0	0.00	0.00	0.00	
		-15.09 L	-11.60	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.26	11.98	1.26	11.98	HS 25.19	45.3
5C1T	2.46	20.64	2.46	20.64	0.00	196.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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. S03
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.800

Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	165.0	-176.5	145.9	-195.7
OPER	300.6C	-268.7	268.7	-300.6C	275.1	-294.2	243.1	-326.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55			
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00		
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00			
		-10.06 L	-7.74	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	1.64	16.99	1.45	18.83	HS 29.04	52.3
5C1T	3.28	29.25	2.90	32.44	0.00	231.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.00	5.98	-16.15	4.60	-17.56	5.74	-13.51	4.42
OPER	5C1T	-17.54	5.41	-13.49	4.16	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.22	12.04	HS 64.47	116.0	
5C1T	6.43	22.15	0.00	514.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.800Dead Load Moment 2.1
Superimposed Dead Load Moment 23.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 183.0	177.9	-157.4	177.9	-157.4	152.3	-183.0	152.3	-
OPER 305.0	279.4	-279.4	279.4	-279.4	253.8	-305.0	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	100.45 R	77.27	200.55	0.0	66.77	51.36	186.55	
		-10.39 L	-7.99	134.63	0.0	-7.91	-6.09	157.85	0.00
OPER	5C1T	83.90 L	64.54	83.55	0.0	0.00	0.00	0.00	
		-10.06 L	-7.74	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.52	17.61	1.52	17.61	HS 30.32	54.6
5C1T	3.03	30.32	3.03	30.32	0.00	242.0

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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	28.67	28.67	1.699
			999999.000
			94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.900

Dead Load Moment 1.2
Superimposed Dead Load Moment 13.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	171.4	-170.1	152.2	-189.3
OPER	300.6C	-268.7	268.7	-300.6C	285.7	-283.6	253.7	-315.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94			
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00		
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00			
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.76	32.75	2.45	49.06	88.3
5C1T	5.62	56.40	4.99	0.00	399.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.6	73.0
OPER	151.3	-111.0	121.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.95	3.01	-19.96	2.31	-20.89	3.12	-16.07	2.40
OPER	5C1T	-21.24	3.55	-16.34	2.73	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.57	23.43	HS 51.35	92.4
5C1T	5.23	34.28	0.00	418.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 8.900Dead Load Moment 1.2
Superimposed Dead Load Moment 13.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.6	173.6	-161.7	173.6	-161.7	158.7	-176.6	158.7	-
OPER 294.3	279.4	-279.4	279.4	-279.4	264.5	-294.3	264.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	62.06 R	47.74	202.94	0.0	39.19	30.15	188.94	
		-5.20 L	-4.00	134.63	0.0	-3.96	-3.04	157.85	0.00
OPER	5C1T	50.81 L	39.08	85.94	0.0	0.00	0.00	0.00	
		-5.03 L	-3.87	58.85	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.56	33.99	2.56	33.99	HS 51.14	92.1
5C1T	5.21	58.53	5.21	58.53	0.00	416.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

	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	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		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	143.50	80.99		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	28.67	28.67	1.699	999999.000	94.775

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	11.96	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load 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.	180.4C	-161.2	161.2	-180.4C	180.4	-161.2	161.2	-180.4
OPER	300.6C	-268.7	268.7	-300.6C	300.6	-268.7	268.7	-300.6

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	5C1T	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.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1T	999.00	999.00	999.00	999.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 9.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.5	70.2
OPER	151.3	-109.2	117.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-31.19	0.00	-24.00	0.00	-24.40	2.12	-18.77	1.63
OPER	5C1T	-25.07	0.00	-19.28	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.10	33.07	HS 42.02	75.6
5C1T	4.36	999.00	0.00	348.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1T

Member I. D. S03
Check Point I. D. 9.000Dead 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. 167.6	167.6	-167.6	167.6	-167.6	167.6	-167.6	167.6	-
OPER 279.4	279.4	-279.4	279.4	-279.4	279.4	-279.4	279.4	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. w/o imp.	Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. w/o imp.	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	5C1T	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

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1T	999.00	999.00	999.00	999.00	0.00	999.0